JULY, 1953

Products Finishing

Machine Tool Finishing.....Page 22
Finishing Process Planning Pays.Page 38
Plastics Aid Plating Processes..Page 46
HAE Coatings on Magnesium...Page 58

Finishes on *Metal* Products

better metal cleaning . . .

a short, short story . . .

to be cleaned:

Wide range of parts for daily production of Mall single cylinder 5 HP gasoline engines for powering chain saws, concrete vibrators, troweling machines and generators.

material: Steel, Aluminum, Magnesium.

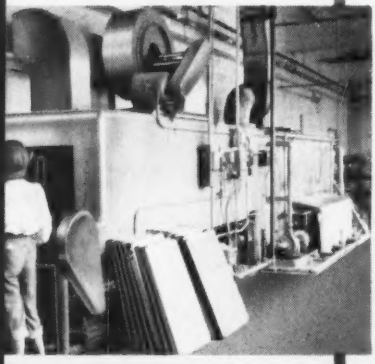
form: Stampings, Castings, Screw Machine Products, Die Castings, Machined Parts.

soil removed: Coolant, Grinding Compound, Oil, Polishing Compound, Shop Soil.

special considerations: Hollow and Recessed parts, Easily damaged parts.

to do the job:

A Cincinnati Cleaning and Phosphatizing Machine specially designed to clean complex parts.



"better results . . .
saving 66%
in time and labor."

MALL TOOL COMPANY • CHICAGO, ILLINOIS

what's your problem?

Write today for new, "case history" literature on complete finishing systems and single purpose machines designed, fabricated and installed by experts.

Cincinnati CLEANING & FINISHING MACHINERY CO., INC.
2008 HAGEMAN ST., SHARONVILLE, OHIO

WHAT'S THE BEST WAY TO APPLY ZINC PHOSPHATE COATINGS TO STEEL?

OAKITE CRYSCOAT HC DOES A FINE JOB FOR US*

*This comment came from a Pennsylvania munitions maker, who added that Oakite CrysCoat HC has put an excellent zinc phosphate coating on 385,000 shells with "absolutely no trouble . . . maintenance and control are very easy."

The Oakite CrysCoat HC coating on steel products—such as artillery shells, rocket fins, auto parts, etc.—weighs more than 200 milligrams per square foot. It more than meets the requirements of U. S. Government Specifications:

JAN-C-490, Grade 1 **57-O-2C, Type 2, Class C** **PA-PD-191, Rev. A**

The Oakite CrysCoat HC Process for preparing steel for painting—either in spray-washing machines or in tanks—has five big advantages:

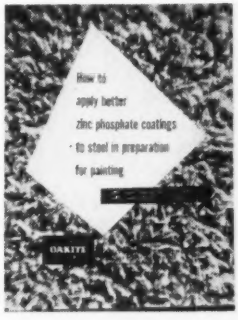
1 The heavy CrysCoat HC coating forms a strong foundation for the lasting adhesion of paint. *See page 5 in free booklet.*

2 The heavy coating gives excellent protection against electrochemical corrosion. *See page 7.*

3 The CrysCoat HC Process is easy to control. Only one material is used for make-up and up-keep. No accelerators, starters, toners or other additives are needed. Only one simple type of titration is used. *See page 9.*

4 The CrysCoat HC reaction produces relatively little sludge and scale. *See page 10.*

5 Stainless steel is not necessary for all parts of the equipment. *See page 11.*



FREE For complete information, mail the coupon for a copy of our 12-page illustrated booklet describing the Oakite CrysCoat HC Process.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

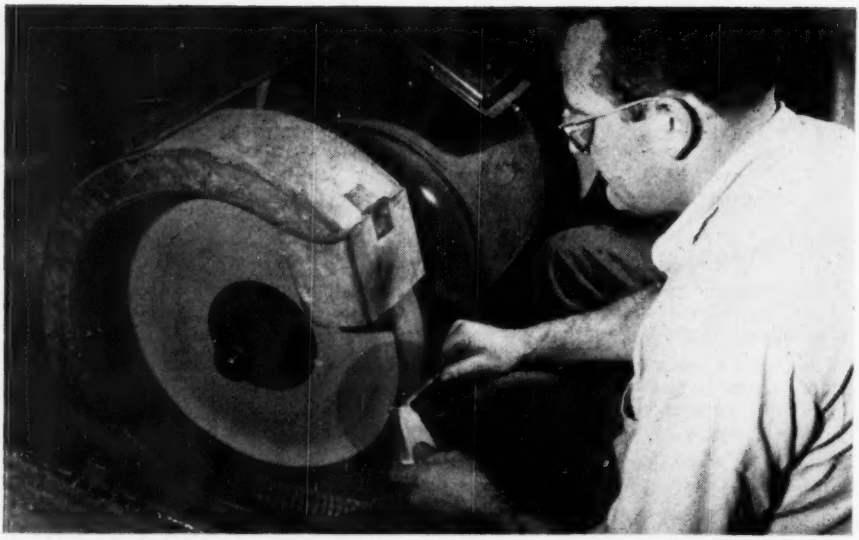
OAKITE PRODUCTS, INC.
20 Rector St., New York 6, N. Y.

Send me a FREE copy of "*How to apply better zinc phosphate coatings to steel in preparation for painting.*"

Name _____

Company _____

Address _____



GOLF CLUB HEADS GET THE "TOUCH OF GOLD" as they are precision polished to the desired weight and finish on a grease wheel coated with ALUNDUM* Abrasive.

For your product-improving "TOUCH OF GOLD" —polish with ALUNDUM Abrasive

For polishing that has the true "Touch of Gold" — that adds most to the usefulness and attractiveness of your products—there's nothing to equal Norton ALUNDUM Abrasive grain.

Made under Norton's strict quality control, ALUNDUM Abrasive is extremely hard and tough, always uniform in grain size and shape, with a maximum of fast polishing, sharp-cutting edges. No oversize grains to mar the finish; no undersize grains or slivers that won't do their share of the work. And its high capillarity means the easy glue-absorption that increases polishing wheel life and efficiency.

These and other advantages assure better polishing — your value-adding, cost-cutting "Touch of Gold" — every time you use ALUNDUM Abrasive.

Get quick delivery from your Norton distributor

of the exact types of ALUNDUM Abrasive you need. He's backed by complete stocks in Chicago, Detroit, Cleveland, Philadelphia, Pittsburgh and Worcester, ready for shipment in container sizes to meet every requirement. And if necessary, he'll gladly call your Norton Abrasive Engineer for expert aid in your polishing problems. Or you can write to Norton Company, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr - Manning Overseas Incorporated, Worcester 6, Mass.

NORTON
ABRASIVES
Making better products to make other products better

*Trade-Mark Reg. U.S. Pat. Off. and Foreign Countries

Yes, let's take the brush holders and rigging in this H-VW-M generator... they're fully insulated for longer life. Look, too, at the pigtail bar which eliminates current passage through springs and fingers. And the special copper graphite brushes—they give you optimum commutator efficiency. The molded "equaload" shunts distribute the brush load equally, minimizing selective action. And that's only the beginning...

All these exclusive improvements are the results of over eighty years of constant development...a continuing policy summed up in H-VW-M Platemanship—your working guarantee of the best that industry has to offer, not only in low-voltage generators, but in every phase of plating and polishing.

8336

PLATEMANSHIP

For technical information on low-voltage generators ask for Bulletin G-102.

Your H-VW-M combination—of the most modern testing and development laboratory—of over 80 years experience in every phase of plating and polishing—of a complete equipment, process and supply line for every need.

HANSON-VAN WINKLE-MUNNING CO., MATAWAN, N. J.

PLANTS AT: MATAWAN, N. J. • ANDERSON, INDIANA
SALES OFFICES: ANDERSON • BALTIMORE • BOSTON CHICAGO • CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS • LOS ANGELES • LOUISVILLE • MATAWAN MILWAUKEE • NEW YORK • PHILADELPHIA • PITTSBURGH ROCHESTER • SPRINGFIELD (MASS.) • STRATFORD (CONN.) UTICA • WALLINGFORD (CONN.)

H-VW-M

INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

"FINISHING KNOW-HOW"

SYNTHETICS • VARNISHES • ENAMELS • LACQUERS

Yours for the asking are all the benefits of the highly specialized knowledge of your Egyptian Industrial Finishes Technician.
The Know-How gained from thousands upon thousands of finishing problems, all successfully solved by Egyptian Laboratory ingenuity, uniquely equips the Egyptian Organization to be your finishing consultant.
Whether your problem is to develop a coating to add life and durability to your product . . . one to perk-up sales appeal . . . a system to speed production or an exacting formula to meet defense work specifications . . . you'll find the quick, the easy, the efficient way is to call on Egyptian Finishing Know-How.

EGYPTIAN
INDUSTRIAL FINISHES

The EGYPTIAN LACQUER MANUFACTURING CO.

Box 444, Newark 1, New Jersey
Plants: South Kearny, N. J. • Lafayette, Ind.

VOLUME 17 NUMBER 10 JULY, 1953

PRODUCTS finishing

CONTENTS

Take Time to Plan Your Finishing Shop 21
Editorial

Hot Spray Finishing of Machine Tools 22
By Roy W. Hill

Photo Review of the 40th A.E.S. Convention 34
Reported by Ezra A. Blount

Plan Your Finishing Facilities and Operations .. 38
By Thomas J. Menzel

Spotlighting Finishing Progress
By Marvin L. Kronenberg

—Plastics in the Plating Room 46

—Electrochemistry of Nickel 52

—HAE Coatings on Magnesium 58

—Vacuum Metallizing 68

News of the Industry 76

New Equipment, Materials, Processes 110

Product Literature 122

The Finishing Touch 126

Opportunity Section 127

Index to Advertisements 128

Ezra A. Blount
editor

H. Leroy Beaver
Frank L. Bonem
Dr. C. Fred Gurnham
Bryant W. Pocock
consulting and contributing editors

M. L. Forney
president

Gene J. Schwarber
advertising manager

Norman S. Rogers
art director

K. M. Gettelman
circulation manager

ADVERTISING REPRESENTATIVES

Richard S. Kline
George E. Hay
431 Main Street, Cincinnati 2, Ohio
MAin 0182

G. M. Fillmore
Duncan W. Barton
342 Madison Ave., New York 17
Murray Hill 7-7390

John M. Krings
Tribune Tower, Chicago 11
DElaware 7-5441

The Robert W. Walker Co.
2330 West Third Street
Los Angeles 5
DUnkirk 7-4388

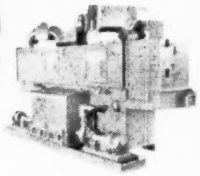
57 Post Street, San Francisco 4
SUtter 1-5568

MEMBER
CCA NBP

Published monthly and copyright (1953) by

Gardner Publications, Inc.
431 Main St., Cincinnati 2
Printed in U.S.A.

BLAKESLEE
parts washers



built to FIT YOUR NEEDS

Built to fit your needs—not only in size and efficiency—*but to last and last.* Blakeslee Metal Parts Washers installed in 1917 and 1918 are still giving satisfactory performance. That's a record for ruggedness that no other manufacturer enjoys. It's proof positive that you can't go wrong when you *buy Blakeslee.*

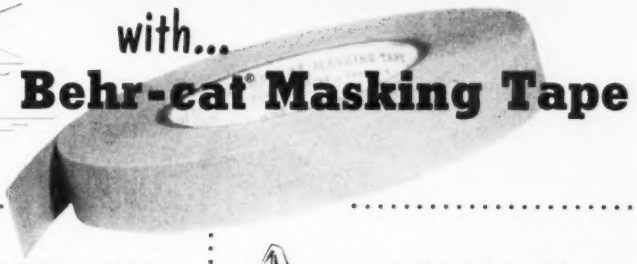
G. S. BLAKESLEE & CO.

*Established since 1880. Manufacturers of solvent vapor degreasers —metal parts washers—Blacosolv degreasing solvent.**

Write today for full information. CHICAGO: 1844 South 52nd Avenue, Chicago 50, Illinois: **NEW YORK:** 381 Fourth Avenue, New York City 16, New York: **CANADA:** G. S. BLAKESLEE & CO. LTD., 18 Cranfield Road, Toronto 13, Canada.

**BLACOSOLV® IS STOCKED IN WAREHOUSES FROM COAST TO COAST*

5 Great Attractions with... Behr-cat® Masking Tape



BALANCED STRENGTH

BEHR-CAT Tape is nicely balanced between lengthwise tensile strength and crosswise tear facility. It's strong enough to flex around contours, yet has stretch enough to lie flat.

CLEANER STRIPPING

BEHR-CAT Tape strips clean . . . leaves no deposit . . . gives you no worry about spoiling a good job. Its adhesive is firmly anchored, is stable, and withstands high temperatures.

MAXIMUM FLEXIBILITY

BEHR-CAT Tape has plenty of "give" on any irregular surface. It shapes to any contour . . . flexes around sharp curves . . . hugs difficult shapes as readily as flats.

EASIER HANDLING

BEHR-CAT Tape handles faster and easier . . . it's thin and stretches uniformly without curlback . . . goes on with a pass of the finger . . . stays put till you strip it . . . thinness prevents paint build-up.

CORRECT ADHESION

BEHR-CAT Tape has just the right degree of tackiness. It sticks tightly under stress without creeping . . . prevents paint seepage . . . grips well on undercoats, lacquers, enamels, bare metals, etc.

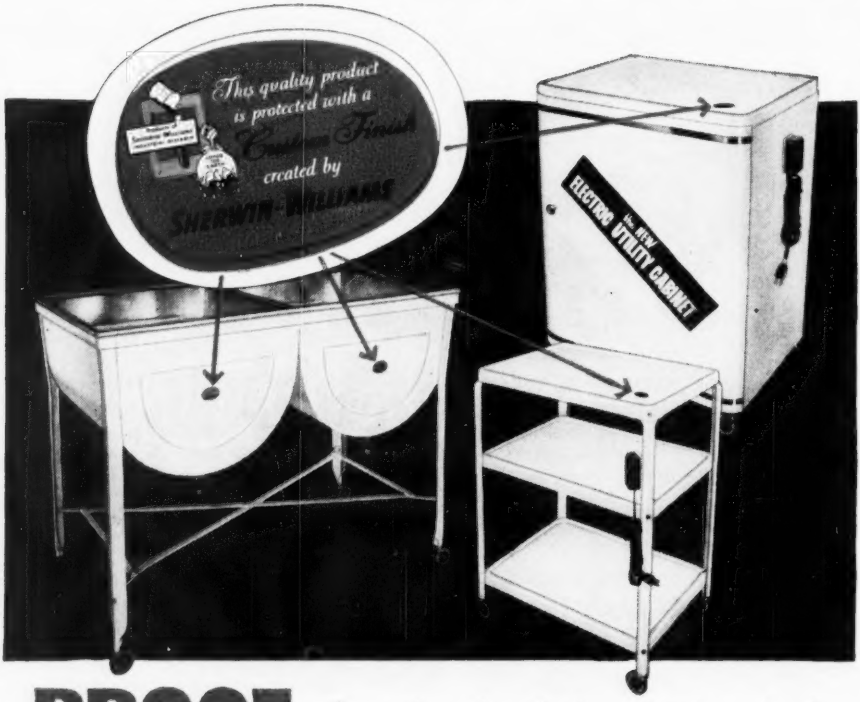
Try a sample roll

"BARNEY" says you haven't seen tops in color separation till you've tried BEHR-CAT. Try a sample roll now — write Behr-Manning Corp., Troy, N. Y. Address Dept. PF-7.

In Canada: Behr-Manning (Canada) Ltd., Brantford
For Export: Norton Behr-Manning Overseas Inc., New Rochelle, N. Y., U. S. A.

BEHR-MANNING
division of NORTON Company

▲ COATED ABRASIVES
▲ SHARPENING STONES
▲ PRESSURE SENSITIVE TAPES



PROOF *of quality that helps clinch sales!*

The gleaming finishes on products of Metal Products Mfg. Co., Houston, Tex., are designed to give lasting customer satisfaction. Food acids . . . household chemicals . . . hot grease . . . won't mar their beauty. Special ingredients protect against marring, chipping or scratching.

There's good reason. Like many other quality appliances, these products are finished with Sherwin-Williams KEMCLAD®, the appliance finish combining the newest developments in synthetic materials.

To get the most value from the finish, the manufacturer is helping to make it work for dealers. A Sherwin-Williams identification seal on every finished product contributes the added sales appeal of the best-known name in finishes.

Sherwin-Williams identification aids —tags, seals and decals—are available to users of Sherwin-Williams quality product finishes. They offer an opportunity for you to further capitalize on the advantages of these outstanding materials.

Ask your Sherwin-Williams Industrial Representative for details, or write The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

WHICH can help improve YOUR PRODUCT FINISHING?

What's your problem? Special effects . . . faster drying . . . hiding defects? Eliminating primer . . . reducing inventories . . . more flexibility of finish for various surfaces and application methods? You'll find the answers to these problems and many others in the following brochures:

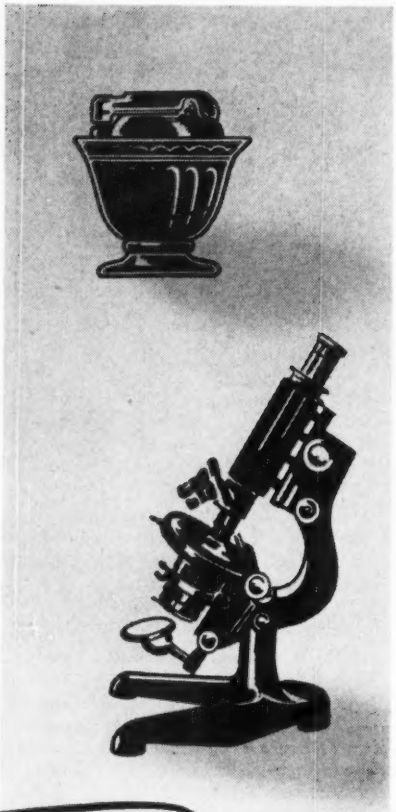
- ☐ **A-502**—Fast-Dri® Synthetic Enamel. Air-dry or bake. For metal or wood products.
- ☐ **FB-505**—Kem® Fast-Bake Enamel. For metal products. Interior or exterior end-use.
- ☐ **AM-514**—Kem® Art Metal Synthetic Baking Enamel. A single-coat wrinkle finish, for metal products.
- ☐ **KL-511**—Kem Lustral® Enamel. Air-dry or bake. Spray, dip, brush. For metal, wood, interior, exterior.
- ☐ **L-503**—Opex® Industrial Lacquer. Very fast drying. For metal, wood, interior or exterior end-use.
- ☐ **D-506**—Dimenso® One-Coat. Single-coat system for hammered or opalescent finishes. Air-dry, bake.
- ☐ **F-501**—Finishing Furniture and Wood Products.

Ask for these and other helpful brochures from your local Sherwin-Williams Branch. Consult your classified telephone directory. Or check brochures you want, and mail to The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

Services of trained industrial finish specialists available in your area through nearest Branch

Your "on-the-spot" source for
PRODUCT FINISHES

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES



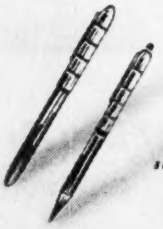
Rhodium is a very hard, brilliantly white metal which never tarnishes. One of the platinum group, it resists corrosive agents that attack other metals instantly and rhodium plated articles defy the effects of marine and industrial atmospheres. Long used for electroplating jewelry and for searchlight and moving picture projector mirrors, the restrictions placed upon other plating metals have inspired its use for plating optical mounts, contacts for communications equipment, radar components, pen and pencil sets and myriad other applications.

Rhodium Plating

BAKER & CO., INC.
113 ASTOR STREET
NEWARK 5, NEW JERSEY

•

New York • San Francisco • Chicago



Let us send you
"Directions for Rhodium Plating."

...from clean, trouble-free paint spray booths!

DuBOIS KLARIFIANT

ELIMINATES THESE SPRAY BOOTH HEADACHES: excessive foaming • clogged hydraulic system • pump failures • water curtain build-up • plugged nozzles and lines • dirty baffles.

Differentiated KLARIFIANT is the new, non-foaming water-wash compound that gives you cleaner spray booths and cuts maintenance clean-up labor 25% to 50%. Recommended by most booth manufacturers, major paint producers, and leading industrial plants!

*Reading Time 45 seconds.

ACT NOW! With your trial order, we will send you complete using directions plus a Spray Booth CHECK CHART for daily, weekly and monthly maintenance.

TRIAL OFFER!

Get one drum of Differentiated KLARIFIANT on trial. If this product does not meet every one of the claims made for it, the unused portion of the drum can be returned for FULL credit.

The DuBOIS Co., Inc.

Cincinnati 3, Ohio Los Angeles 33, Calif.

DuBois warehouses and representatives are located coast-to-coast

nyb

PROPELLER FANS

Propeller type ventilating fans deliver large volumes of air at low resistance and low current consumption. All wheels are machine balanced for smooth, vibrationless operation. Made in 2 types and 7 basic sizes to cover a wide range of industrial applications. Pressed steel panels provide rigid support and simplify installation. Totally enclosed motors mounted in heavy welded wire safety guard. Wheel diameters from 12 inch to 48 inch. Direct or belted drive. Capacities from 675 cfm to 23,500 cfm.

Penthouses for roof installation of ***nyb*** Propeller Fans can be furnished in 7 sizes. Louvers open and close automatically to protect fan against the weather. Separate louvers for wall mounting also available.

Write for Bulletins

nyb

IUHA

SEE OUR CATALOG IN SWEET'S

CERTIFIED RATINGS

AUTHORIZED BY AMCA

All New York Blower Company products are laboratory tested, accurately rated and fully guaranteed in strict accordance with Standard Test Codes.

THE NEW YORK BLOWER COMPANY

SALES OFFICES • 3167 SOUTH SHIELDS AVENUE • CHICAGO 16

FACTORY, LAPORTE, INDIANA

CLINCO

PIONEERING QUALITY INDUSTRIAL FINISHES SINCE 1928

Finest Quality Enamels for ELECTROSTATIC SPRAYING Applications

CLINCO experience and proven know-how on this highly specialized process are yours for the asking. We'll gladly work with you on any problems.

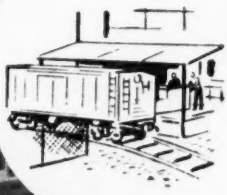
Customer Service is Our No. 1 Concern

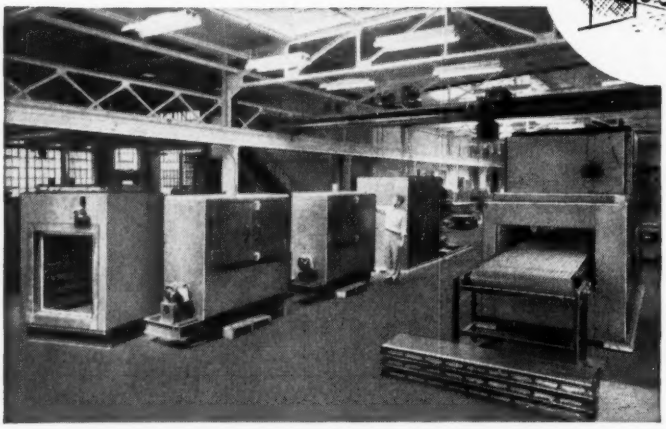
THE CLINTON COMPANY

1210 ELSTON AVE. • CHICAGO 22, ILL.

KIRK and BLUM Industrial Ovens

Ready To Go!





Many KIRK & BLUM Industrial Ovens, although designed and built to specifications, are shipped completely assembled and tested, ready to operate. Once "spotted" in your plant, they can be connected and in operation in a few hours, saving time, expense and confusion.

Illustrated is a representative group recently shipped to well known industrial firms. From right to left: core-mix drying oven. Two moisture evaporation ovens for chemical powders. Moisture removal oven for carbon electrodes. A conveyorized oven for drying insulating varnishes.

For information or literature on any of these products write The Kirk & Blum Mfg. Co., 3116 Forrer St., Cincinnati 9, Ohio.

KIRK AND BLUM
INDUSTRIAL OVENS

• Industrial Ovens • Fan Systems for Various Industries • Dust Collecting Systems in Metal Industries.

OSBORN

Which of these versatile brushes will cut your costs?

Osborn wire brush, automatically heated, removes zinc chromate from around rivet holes in aircraft production.

Hard-to-get-at jobs are simplified . . . costly hand operations are eliminated . . . when you switch to one of these special-purpose Osborn power brushes.

These versatile wire brushes are just a few of the complete Osborn line of power brushes for every need. Your Osborn Brushing Analyst will gather necessary facts in your plant . . . study your production equipment and recommend the most efficient, economical power brushing techniques.

The small Osborn brush shown in operation enables one man to do the work of seven men. Output per man went up 700% in this aircraft application of removing zinc chromate priming from around rivet holes in wings and fuselages. Formerly this job was done by hand with small sandpaper discs.

Such results are duplicated every day by Osborn Brushing Analysts. They can solve *your* brushing problems of product cleaning, burr removal, roughing, polishing or finishing with similar startling economies. For complete information at no cost, call your nearby Osborn representative or write to *The Osborn Manufacturing Company, Dept. O-7, 5401 Hamilton Ave., Cleveland 14, Ohio.*

Osborn Brushes

OSBORN POWER, MAINTENANCE AND PAINT BRUSHES AND FOUNDRY MOLDING MACHINES

28 Years of Experience In Sale and Service of

CHEMICALS TO CLEAN and PREPARE METAL for PAINTING

Surphos — CLEANER and PRODUCER OF PHOSPHATE COATINGS.

Sol-Klean — PHOSPHORIC ACID RUST MOVER AND ETCHER.

Industro — ALKALI CLEANERS, STRIPPERS and AIR WASH COMPOUNDS.

Industrosolv — SOLVENT EMULSIONS FOR SPRAY WASHING MACHINES.

SOL-KLEAN prepares steel and aluminum for painting, removing rust, oxide and oil. It etches the metal and gives a thin phosphate coating. One volume of Sol-Klean, diluted with 3 volumes of water, usually brushed on the metal at room temperature. It penetrates oil and dissolves rust. Sol-Klean is removed together with the dissolved oil and rust by wiping with rags or flushing with water. Metal may also be cleaned and treated by immersion in hot Sol-Klean and rinsing in water. Sol-Klean is non-inflammable and evolves no toxic or corrosive fumes.

SURPHOS cleans and produces a phosphate coating on sheet steel, machined and cast iron. It anchors the paint finish and increases its humidity and salt spray resistance. Use hot (one ounce per gallon solution) in Power Wetting Machine or dip tank. Acid proof equipment not needed.

NOTE:

Consult Us On Your Government Specification Requirements

INDUSTRIAL CHEMICAL PRODUCTS COMPANY

3778 BELLVUE AVENUE — DETROIT 7, MICHIGAN

Representatives In Principal Cities

IN CANADA, MADE AND SOLD BY BOYLE CHEMICALS LTD. LONGBRANCH, ONT.

Actual unretouched photographs

argus

"Reflects" a quality finish with STEVENS L-V* REPORTS!

Argus Cameras, Inc., maker of the world's most popular 35 mm camera, came to Stevens' Customer Service Laboratory with a polishing problem. How to get a mirror finish on flash reflectors yet eliminate hand wiping as a last operation?

A Stevens L-V (Laboratory-Verified) report solved the problem!

Working closely with supervisors and the man at the wheel, Stevens showed how different compounds, buffs and automatic buffing methods would achieve the desired result.

If YOU have buffing or composition problems, why not let a STEVENS L-V* Report do the same for you. Call your Stevens representative or write direct. FREDERIC B. STEVENS, INC., DETROIT 16, MICHIGAN.

*Laboratory-Verified

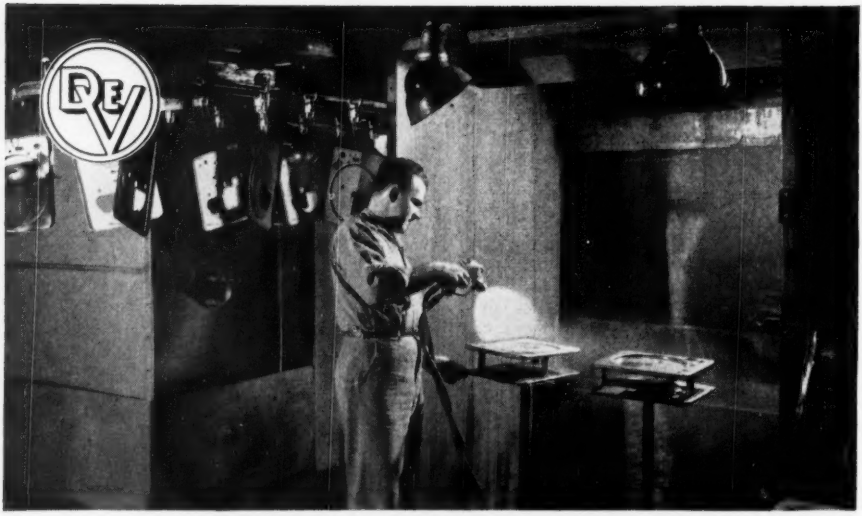
FREDERIC B. STEVENS

EVERYTHING FOR METAL FINISHING

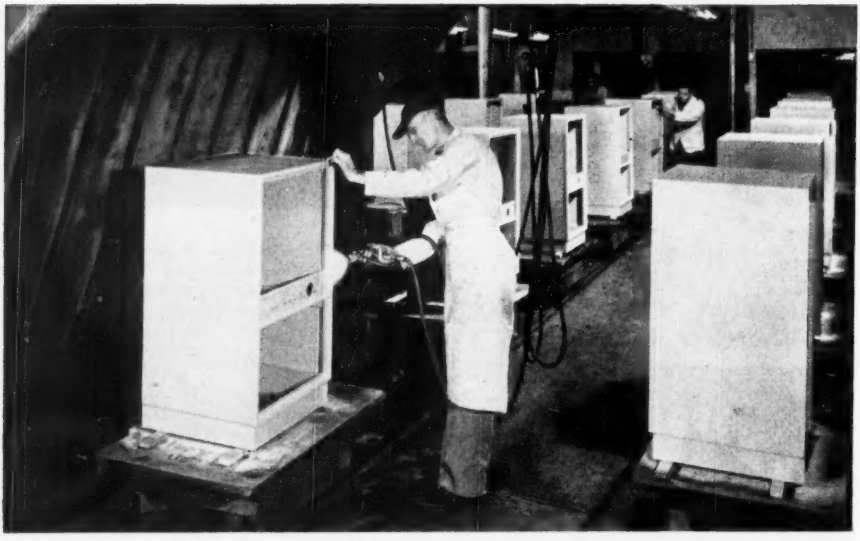
DETROIT 16, MICHIGAN

BRANCHES: BUFFALO • CLEVELAND • INDIANAPOLIS • NEW HAVEN

IN CANADA: FREDERIC B. STEVENS OF CANADA, LTD., TORONTO • MONTREAL • WINDSOR



The efficient exhaust of this DeVilbiss water-wash booth makes it ideal for high-speed spraying of Magnavox components.



DeVilbiss spray gun gives operator a wide pattern at normal pressures. Fewer passes mean less painter fatigue.

BRANCH OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT

The secret of those magnificent finishes on Magnavox

Magnavox uses DeVilbiss guns to spray stain, sealer and finish coats.

The Magnavox Company, Fort Wayne, Indiana, turns out cabinets famous for eye appeal. Painstaking care – some cabinets receive seven finishing coats – and DeVilbiss spray equipment maintain top quality for Magnavox.

Magnavox uses a variety of DeVilbiss spray guns, booths, hose, connections and other accessories. Guns, for example, spray stain, sealer and finish coats. Their ball-and-cone principle of fluid tip and air cap centering assures a perfect spray pattern of uniform quality and fine atomization. Lightweight and finely balanced, they adjust exactly to the pattern desired.

The result is smooth finishes with greater depth, more uniformity. Painters are able to get uniform coverage because of the wide, even spray pattern. Result – fewer passes, less painter fatigue.

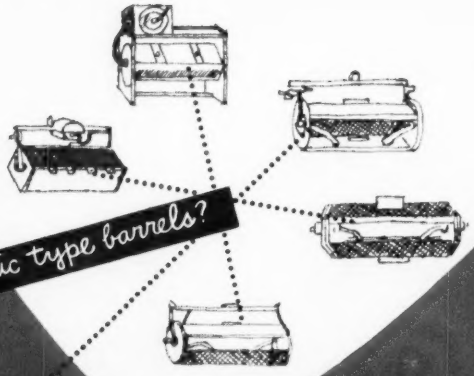
You can get complete data on DeVilbiss spray guns and other DeVilbiss equipment for high-quality finishes from your DeVilbiss jobber or our nearest branch office. Call today, or write direct to the factory.

THE DEVILBISS COMPANY
Toledo, Ohio

Windsor, Ontario • London, England
Santa Clara, Calif.

FOR BETTER SERVICE, BUY
DEVILBISS

THE UNITED STATES, CANADA AND THE WORLD



using plastic type barrels?

then insist upon

Cowles HS cleaner

HS is a heavy duty cleaner of medium alkalinity, particularly effective in plastic-type barrel cleaning operations where high detergency is required at relatively low temperatures. This anhydrous, silicated cleaner gives maximum cleaner life, produces no undesirable scums in the acid or rinse tanks, and rinses off quickly and completely. Cowles HS is especially formulated to handle extraordinary heavy soil loads in barrel lines or other soak tank operations, including removal of large amounts of oil.

We will be glad to send you complete information.

prompt shipments from convenient warehouse stocks

COWLES TECHNICAL SERVICE gladly furnished upon request

COWLES CHEMICAL COMPANY

METAL CLEANER DEPARTMENT

7016 EUCLID AVENUE * CLEVELAND 3, OHIO

editorial

JULY, 1953

Vol. 17, No. 10

Take Time to Plan Your Finishing Shop

Even in these enlightened days when most companies entrust their engineering departments with the job of designing new or expanded finishing installations, or employ competent consultants for the purpose, there is still need for an increased appreciation on the part of the managements of many plants as to some of the fundamental considerations which affect such planning. Many of the points to be considered are discussed in the article beginning on page 38 of this issue.

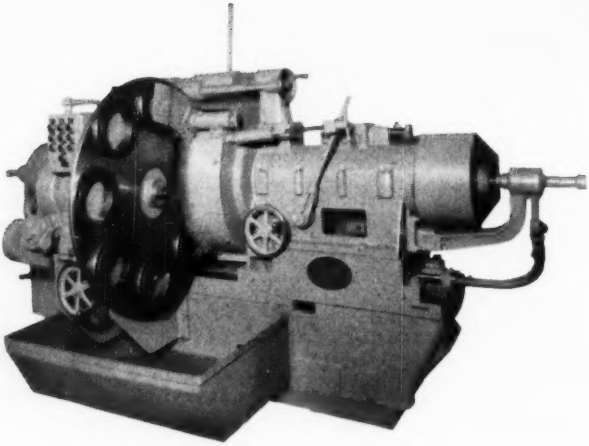
All process planning must start with the product or parts to be finished. The base metals involved, the types of finish to be applied, the range of sizes of the items, the required rate of production, are all facts which must be known or estimated with reasonable accuracy before decisions as to the finishing processes, size and kinds of equipment, and necessary auxiliary equipment, can be made. Once the finishing equipment has been determined, along with the power, water, and other facility requirements, the problem of working the equipment into the available floor space, or in estimating additional floor space requirements can be approached.

Once the basic decisions have been made by the manufacturer and his engineers, the finishing equipment and process suppliers can assist materially in specifying process and equipment details, and planning the installation. It is not a matter for "snap" or "hap-hazard" judgment. Even under the pressure of demands for increased production, or competitive pressures of various sorts, the matter should be given adequate study, and the necessary time allotted for the purpose.

It takes a little time and costs money to plan adequately for the expansion of existing facilities or for a new finishing installation. It also costs money to rearrange installed equipment to correct some fundamental error in planning. This is particularly true if the equipment was installed incorrectly for the relatively simple reason that not all the persons concerned with the planning and equipping of the finishing department were apprised of all the factors to be considered.

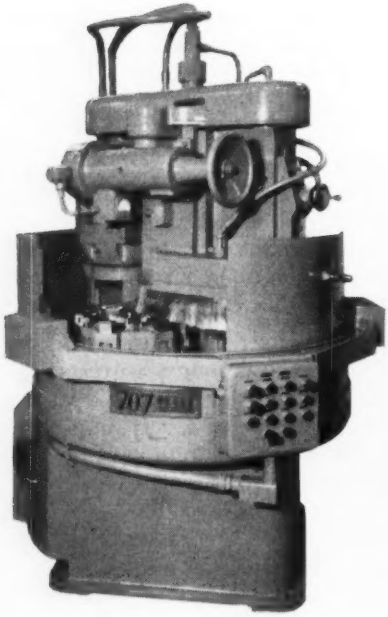
Ezra A. Blount

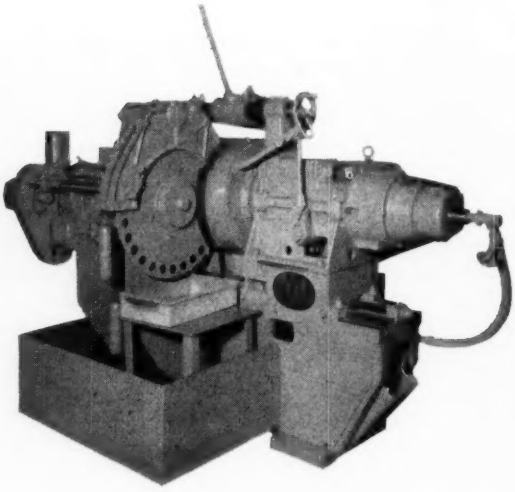
—EDITOR

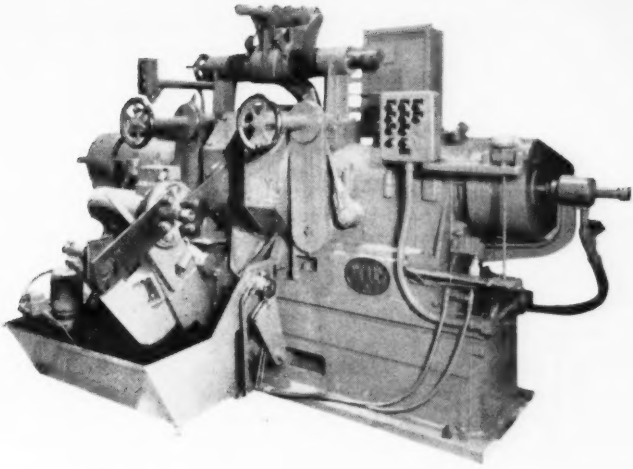


Hot Spray Finishing

By ROY W. HILL,
Superintendent, Traffic and Maintenance,
Besly-Welles Corporation





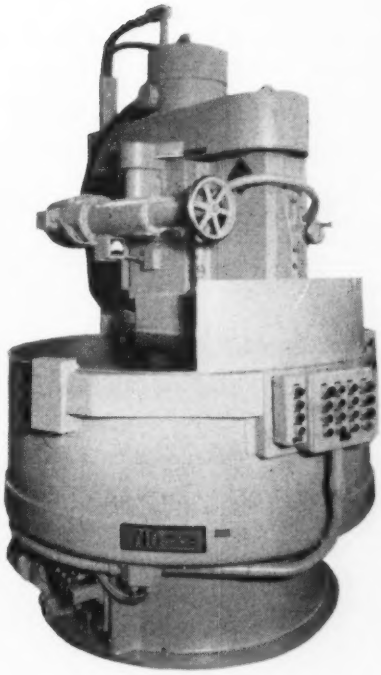


of Machine Tools

THE Machine Tool Division of Besly-Welles Corporation located at Beloit, Wisconsin, has been a pioneer and leader in the disc grinder field since 1891. The Besly line consists primarily of disc or surface grinders for genrating flat surfaces.

The five principal types of disc grinders are Double Horizontal Spindle, used to grind two parallel opposed surfaces simultaneously; Double Vertical Spindle, used to grind two parallel opposed surfaces simultaneously; Vertical Spindle, usually used as a gravity feed machine for wet or dry grinding; Radial Head wet or dry face grinder, consisting of a circular base with a center column—entire unit is free to oscillate radially; Single Spindle, used for dry or wet grinding with horizontal spindle and grinding member on each end. The company also produces special types of grinders as well as abrasive wheels and discs to be used with the grinding machines.

A few of the many types and models of grinders manufactured by the company are illustrated on these pages.



HOT SPRAY FINISHING OF MACHINE TOOLS

The heavy iron and steel components which are machined and assembled to produce machine tools do not generally lend themselves to the high-speed, conveyorized cleaning, painting, and baking cycle that is used for lighter metal shapes. This article describes how the Besly-Welles Corporation uses hot spray painting together with a new approach to finishing practice and product routing to reduce total finishing time from 5 days to 5 hours.

PF FEATURE

Finishes on the wide variety of types, models, and styles of disc grinders, manufactured by the Besly-Welles Corporation, consist of machine tool lacquer or enamel on cast iron, steel, and aluminum parts. The finishing setup in the new Besly-Welles plant was designed and installed to reduce finishing time, and at the same time improve finish quality. This was accomplished by a reconsideration of process, equipment, and material flow factors. Figure 1 is an aerial view of the new Besly-Welles plant, and Fig. 2 is a sketch of that section of the plant devoted to finishing and final assembly of disc grinders.

Traditionally, castings for machine tools have been snagged or ground, and machined prior to finishing. There are certain disadvantages inherent in this method of manufacture. If castings are machined immediately upon receipt from the foundry, there may be some distortion in seasoning which may affect the critical dimensions of the machined surfaces. If castings are stored prior to machining, either a large outdoor or indoor area must be used as a storage area. In addition, castings rust during storage, making final finishing more difficult; paint does not adhere to rust, and more time is needed to snag or prepare rusty castings. Also, masking of certain areas must be employed if the finishing process follows machining operations. Since the various finish coats must air dry, it is easy to visualize that this process requires a great deal of time, and, upon occasion, may become

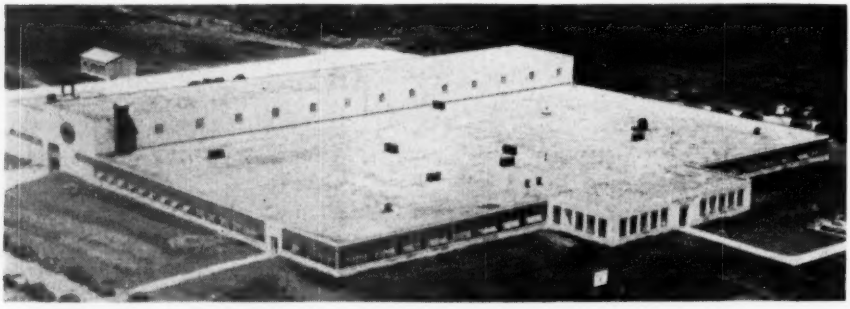


Fig. 1—The new plant of Besly-Wells Corporation.

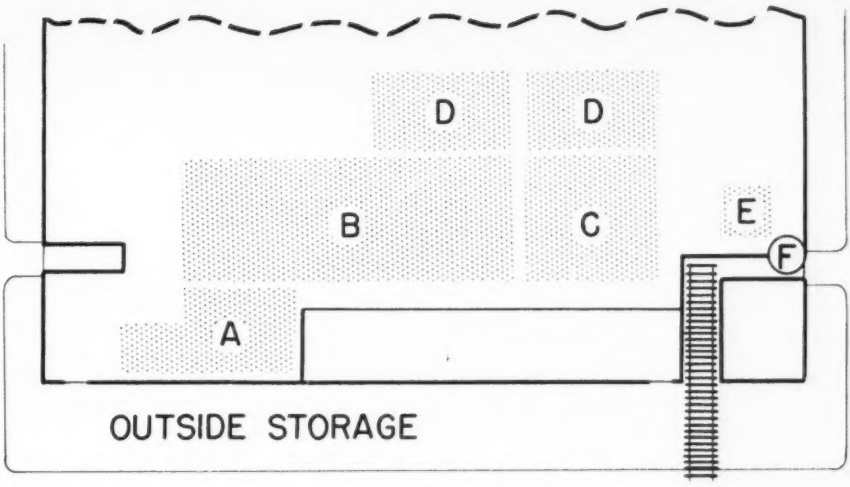


Fig. 2—Diagrammatic sketch showing partial floor plan of just the portion of the plant devoted to machining, storage, and finishing of parts for the company's line of grinders. The areas may be identified as follows:

A. Light machine bay.
B. Heavy machine bay.
C. Assembly floor.
D. Finished and semi-finished storage.
E. Machine finishing and painting.
F. Shipping department.

Castings are received for snagging and grinding in the finishing area (E). They are smoothed, filled, sealed, and given one finish coat as described. Then they are transferred to the outside storage area indicated on the illustration. From there, they enter the machining area (A) and progress through areas (B), (D), (C), and (E) in turn, after which the completed machine tool is shipped from the plant near the area indicated by (F).

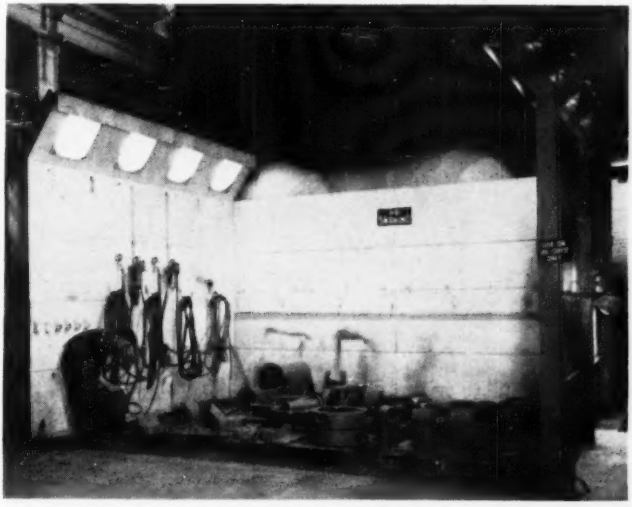


Fig. 3 — The entire working floor of this Binks Dynaprecipitor water wash down draft spray booth is loaded with pallets of castings to be filled, sealed, or finish coated by hot spray application. Pressure tanks for paint, and paint heaters are located outside the spray booth in the area just to the rear of the operator. Spray booth walls are coated with Liquid Envelope strippable plastic coating to simplify spray booth maintenance.

the bottleneck of the manufacturing plant.

Besly-Welles engineers approached the problem from the standpoint of the most efficient method for assembly, test, and delivery of the completed machine tool. The manufacturing method that made it possible to deliver a completed machine tool to a customer in the shortest elapsed time from the time the order was received was that of the assembly line technique, in which the completed machine was put together from a stock of machined and finished sub-assemblies or parts.

Manufacturing Process

In order to achieve maximum plant floor space utilization, season castings adequately, and accomplish the desired speed in assembly and final finishing of the machine tools, the following manufacturing process, or sequence of operations, was adopted.

1. Castings received, rough ground, and arranged on pallets.
2. Filler, sealer, and one lacquer coat applied by the hot spray method.
3. Castings, still on pallets, placed in outside storage for seasoning.
4. Machining operations.
5. Machined parts placed in sub-assembly storage.
6. Final assembly.
7. Final finish, packing, and shipping.

As can be noted in Fig. 2 the plant is arranged to accomplish the material flow outlined above efficiently, speedily, and with no lost motion. Handling of pallets of castings, individual castings, or the large machine tools themselves, is accomplished with fork lift trucks or an overhead crane which runs the full length of the assembly, finishing, and shipping bay.

The Finishing Process

Castings to be processed are delivered to the grinding area adjacent to the spray finishing and sanding area of the plant. Surface imperfections are

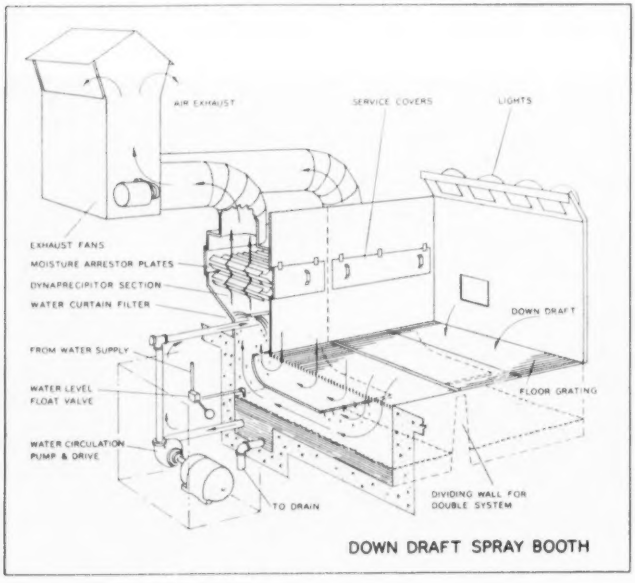


Fig. 4 — A cut-away view of the Binks spary booth, indicating how certain parts of the booth function. The booth is designed so that either half may be operated independently or the entire booth area may be operated as one unit. The exhaust air is drawn down thru the grating in each half of the booth and separated into two portions by the "slitter" plate which extends forward to a point one-half the depth of the booth. Air passing under the slitter plate must pass thru a water curtain. The air then passes thru four curtains of water, past four baffle plates, and then into the exhaust stack. Air is exhausted from the booth at the rate of 42,000 c.f.m. The water wash system removes all paint from the air.

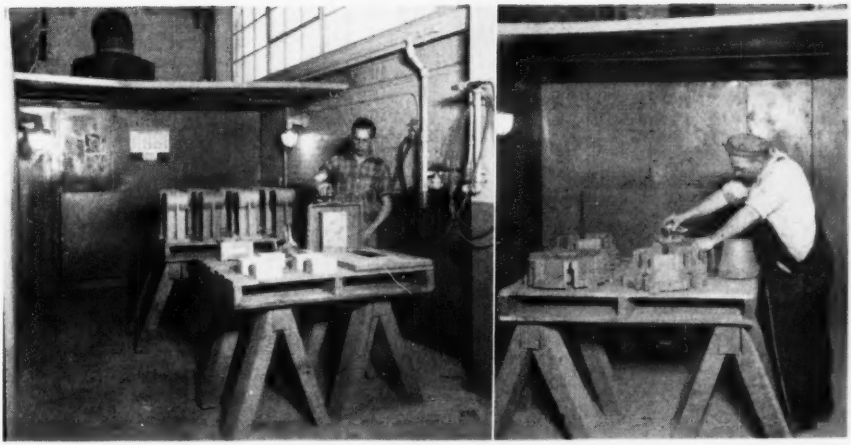


Fig. 5—Two views of the sanding area located directly adjacent to the spray booth. Sanding dust created in this area is removed by exhaust fans located in the rear of the sanding booth.

removed by snagging or grinding. Aluminum castings are smoothed with rotary, power-driven wire brushes. After the snagging operation, castings or welded sheet steel assemblies are placed on pallets and transferred to

Fig. 6—A view of the outside storage area where castings, already coated with three or more protective coats, are stored for seasoning prior to machining. As can be noted, the castings are stored on the pallets on which they were placed after snagging. The pallets of lighter castings are stored in steel racks to conserve storage space.

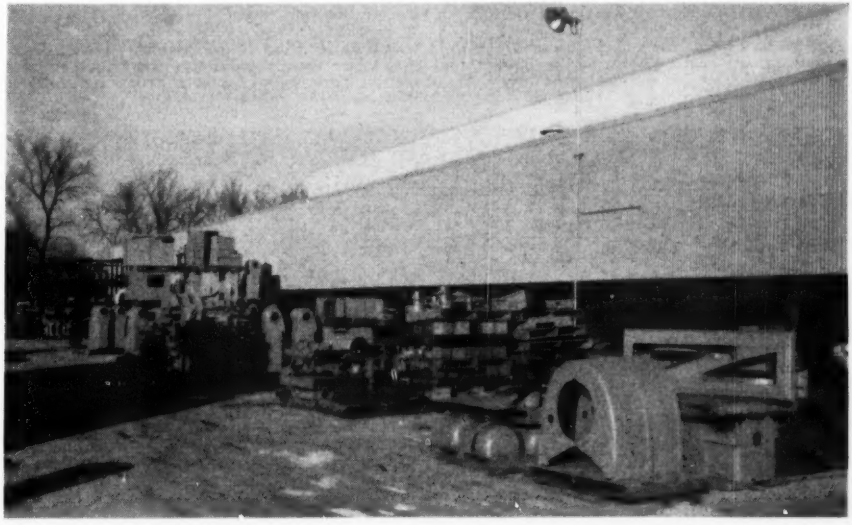


Fig. 7—After light and heavy machining of seasoned castings, the parts or sub-assemblies are stored systematically in the finished and semi-finished storage area.

the Binks down-draft spray booth (see Figs. 3 and 4) by lift truck or overhead crane.

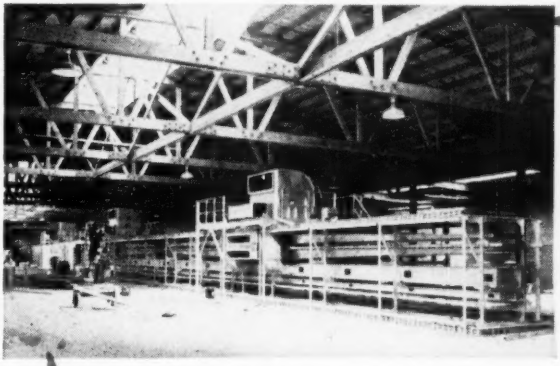
The floor of the large (14 by 16-foot) spray booth is loaded full of castings to be filled. The castings are then filled with Lowe Brothers Thermo Sprafil sprayed on hot. The material is heated in a Bede Paint Heater mounted on one outside wall of the spray booth. Hot spray application makes quicker drying possible. A thicker, yet smoother coating is applied by this process.

After the parts are filled they are moved (still on pallets) to the sanding area adjacent to the spray booth, and the filler coat is smoothed by hand and machine sanding (see Fig. 5). Generally, castings are permitted to dry overnight before sanding, but it is possible to sand them after a drying period of only 4 hours.

Sanded castings are returned on pallets to the spray booth, sprayed with a coat of Lowe Brothers Sealer

Fig. 8—An overall view of the assembly area in which Besly grinders are assembled and tested. The overhead crane shown in the background of the photograph facilitates movement of parts or completed machines. The same crane can transport parts or machines into the spray booth for final finishing.

Sometimes It Pays To Do Things Backwards



Drying Oven for Paper Products

Another example of the versatility and engineering ability of Peters-Dalton in meeting problems is illustrated in the installation pictured above. This huge, 200-foot, three heating zone water drying oven was required by a paper manufacturer to dry his molded paper products. Usually, an oven's shell is first erected, then the interior working parts are assembled within it. Due to space limitations, however, the usual method was impossible, so PD engineers worked *backwards* on the job, constructing the oven's interior first, then erecting the shell over the finished oven—meeting the manufacturer's needs for an efficient drying system without sacrificing valuable plant space.

Baking and drying equipment should be designed for the specific product and process. Whatever *your* baking and drying problems are, PD engineering experience and production "know-how" stand ready to meet and *solve* them. We will be glad to tell you more if you write, wire or phone.

Hydro-Whirl Paint Spray Booths *Industrial Washing Equipment*
Drying and Baking Ovens *Hydro-Whirl Dust Collecting Systems*

Peters-Dalton INC.
17908 Ryan Road • Detroit 12, Michigan

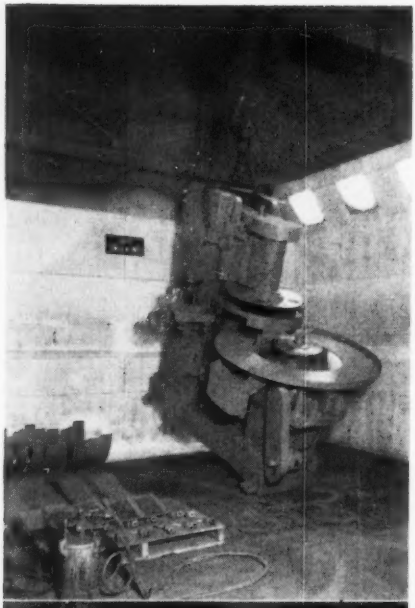


Fig. 9 — Assembled grinders may be moved from the assembly floor directly into the spray booth for final finishing.

by hot spray application. As in the case of the filler, the sealer is fed to the spray guns from a DeVilbiss 10-gallon agitated spray tank through the Bede paint heater. The material circulates continually between the heater and the spray gun to maintain constant temperature and viscosity.

Following the drying of the sealer coat, which occurs almost immediately, the parts receive one coat of hot spray lacquer finish. Still on pallets the parts are taken to the outside storage area shown in Fig. 6 to be stored for an appreciable period for the purpose of seasoning the castings. During this period some change in dimensions may take place, but such changes do not affect the quality of the completed product, since the small variations occur prior to machining, not after the machining operation. Following the necessary machining operations, parts are transferred to the sub-assembly storage area shown in Fig. 7, from which they can be removed and taken to the adjacent assembly floor shown in Fig. 8 when production of the machine concerned is scheduled.

Final finishing of the assembled machine tool is quickly and easily accomplished. First the machine is washed with a solvent, after which abrasions in the finish are filled with fast drying spot filler. These filled areas may be sanded out within 10 minutes, and

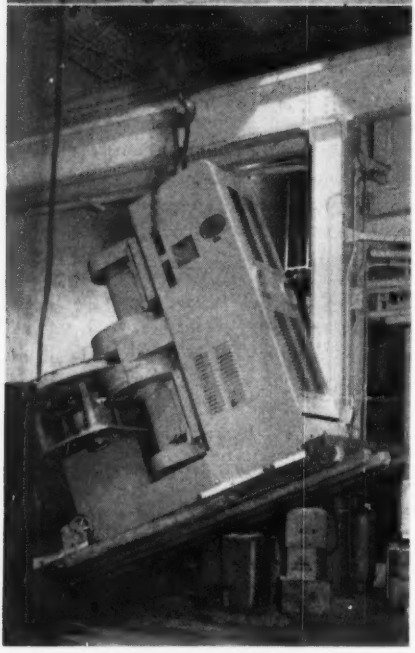
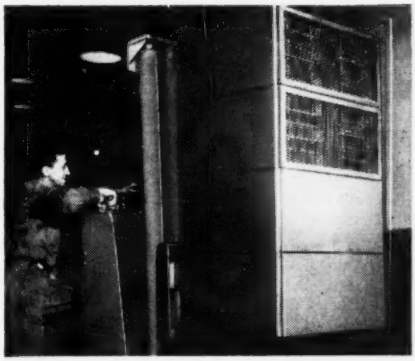


Fig. 10 — After final finishing, grinders are sprayed with a light protective coating and may then be loaded into trucks for shipment. The shipping bay is so located that the overhead crane may be used to load the completed machine tools.



Three Ways You Save With G-E Plating Power Supplies

1 SAVE ON INSTALLATION COSTS with G-E Plating Power Supplies. No special foundations are required. Simply move rectifier unit into place with a fork truck, make connections, and it's ready to operate.

2 SAVE ON MAINTENANCE COSTS. A cooling fan, requiring occasional lubrication, is the only moving part. All parts are corrosion resistant. Cooling design minimizes intake of dirt, dust and corrosive fumes.

3 SAVE ON EQUIPMENT LIFE. At rated output G-E copper-oxide rectifier stacks last almost indefinitely. On test stands G-E selenium rectifier stacks have maintained rated output for over 60,000 hours.

General Electric Plating Power Supplies are available for laboratory plating, barrel plating, and with manual or automatic regulation. For more information contact your nearest G-E Plating Rectifier agent or G-E Apparatus Sales Office, or write Section 464-13E, General Electric Company, Schenectady 5, New York.

GENERAL ELECTRIC

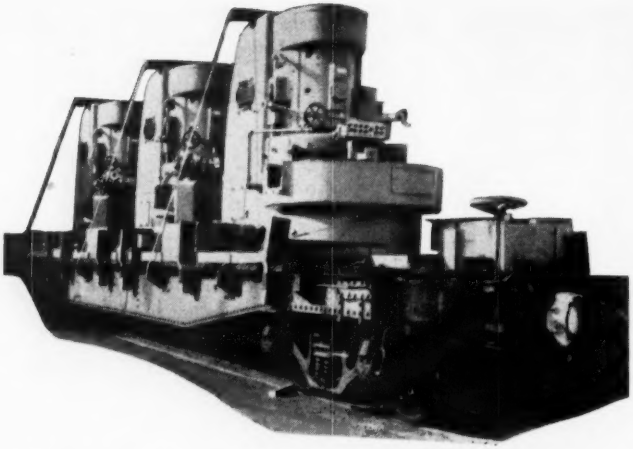


Fig. 11—Larger grinders must be shipped on railroad cars. This photograph shows three large disc grinders leaving the Besly-Welles plant. (*All illustrations courtesy Besly-Welles Corporation, Beloit, Wisconsin*)

one coat of sealer applied by hot spray application. Following the sealer, one coat of hot spray finishing material is applied. During the application of these two final finish coats, grease fittings and machined surfaces on the machine tools are masked. After the final finish has dried, (this takes place almost immediately) the machined surfaces are given a light protective spray coating to protect these surfaces from corrosion during shipping. Figure 9 shows how a large machine is brought into the spray booth for final finishing. Figures 10 and 11 show completed grinders leaving the Besly-Welles plant by truck or rail.

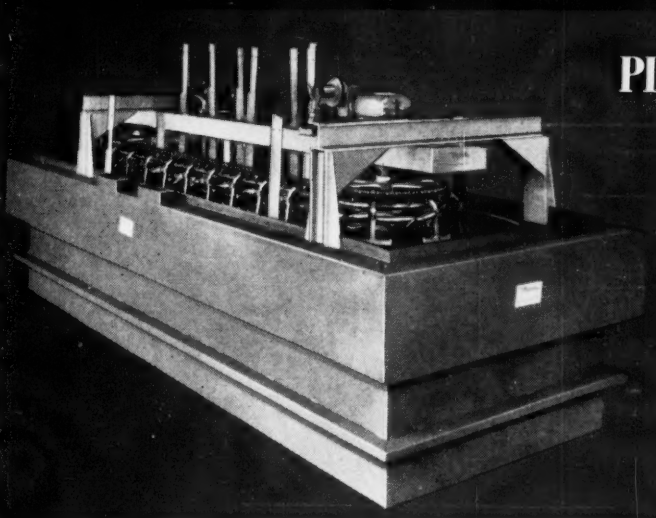
Economies in the Finishing Process

The finishing process in use at Besly-Welles Corporation has made possible the realization of several economies, in addition to the major consideration of making possible much more rapid assembly and delivery of completed grinders. The new finishing process consists essentially of nine operations instead of twelve or thirteen operations which constituted the process formerly employed. The finishing materials now used have reduced the need for so much grinding. Operator training and education has contributed to this saving also. Sanding time has been saved by the use of the hot spray filler and hot spray method, because a smoother coat is now being produced. At the same time a substantial saving in solvents has been made. Adding to the peace of mind of the finishing foreman has been the fact that with hot spray, it is possible to control the viscosity of the spraying material regardless of room temperature.

The new finishing setup at Besly-Welles Corporation is the result of a great deal of practical engineering on the part of company personnel, as well as considerable cooperative effort between company engineers and equipment and material suppliers. The results obtained have fully justified these efforts.

This year is the 150th anniversary of the discovery of palladium by the British scientist, William Hyde Wollaston, who isolated this precious metal from native platinum. Within a few years, he and his business partner, Smithson Tennant, also discovered rhodium, iridium and osmium. Of the six platinum metals, only ruthenium escaped their notice. These discoveries were an outgrowth of Wollaston's successful effort to produce malleable platinum for commercial use.

A NEW WAGNER SEMI that grew out of A TOUGH PLATING PROBLEM



Here is a Wagner Semi-Automatic electroplating machine that adds a new high in plating versatility and efficiency of operation. It is provided with heavy duty battery clips for plating the insides of tubes or other hard to reach plating surfaces. This special semi-automatic system, made for a discriminating customer provides precise control of plate thickness on a specialized group of products with a minimum of attention. You too can benefit from the production know-how of Wagner engineers who constantly search for new and better ways to improve plating processes and equipment which result in lower costs, higher production and a minimum of maintenance.

BEFORE PURCHASING YOUR NEW PLATING SYSTEM . . . CHECK YOUR REQUIREMENTS AGAINST THESE WAGNER FEATURES

1 Simplicity of design and construction

2 Heavy duty battery clips provided for auxiliary contact

3 Anode bar equidistant from hooks, plating through entire cycle

4 Power unit and drive mechanism in one integrated package

5 Variable speed, controlled by one hand knob

6 Standard belt chain, replacements available everywhere

7 Standard fittings provided at all lubrication points

8 Agitating unit mounted on one bracket

9 Fully insulated at all strategic points

10 Double T work carriers shown on 12" centers, may be readily relocated on 16", 20", 24", etc.

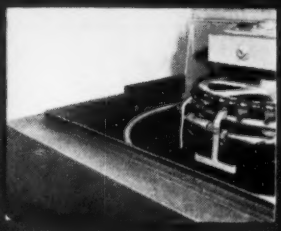
11 Completely bussed for easy installation

12 Adjustable draft control

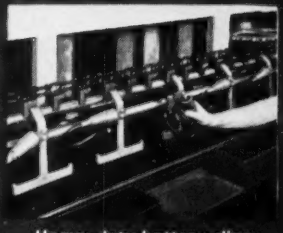
13 Drains for condensation

14 Central stack attachments

15 Micarta pusher blocks



Adjustable draft box hoods



Heavy duty battery clips

GREATER PRODUCTION WITH WAGNER SEMI-AUTOMATICS

Wagner Brothers build a complete line of plating equipment job-fitted to your specifications or plant set-up . . . and our modern research facilities and pilot plating plant contains exacting equipment for analyzing your present plating and finishing operations. For full particulars to meet your plating requirements, get in touch with the Wagner representative nearest you, or write direct to us stating your needs.

Wagner

BROTHERS INC.

DETROIT 3, MICH.

CHICAGO ROCHESTER CLEVELAND

CINCINNATI INDIANAPOLIS

Wagner Brothers, Inc., 432 Midland, Detroit 3, Mich.

☐ Send name of representative

☐ Send information on Wagner Semi-Automatics

☐ Put me on your Price-Tips mailing list

Name _____ *Title* _____

Company _____

Address _____

City _____ *Zone* _____ *State* _____

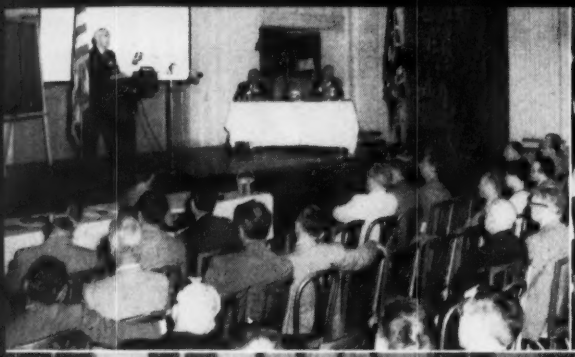


Fig. 1—(Above, right) A view of the busy registration desk which recorded almost 1400 registrants during the Convention.

Fig. 2—(Above, left) At the opening session of the Convention Dr. William Blum reported on electroplating in Australia as observed during his recent visit to Australia and New Zealand.

Fig. 3—(Left) A.E.S. members and guests filled the Crystal Ballroom to hear Dr. Blum's address.

Photo Review of the 40th A.E.S. Convention

Fig. 4—(Above, left) Seen at the close of the opening session are (left to right) L. R. Critchfield, Cincinnati; Fred Fulforth, educational chairman; Frank Mesle, in conversation with George B. Hogaboom, and C. F. Nixon, A.E.S. past president receiving more detailed information from Dr. Blum.

Fig. 5—(Left) Conventionites enjoyed the Annual Open House given by the Metal Finishing Suppliers' Association.

Fig. 6—A view of the Speakers' Luncheon held prior to the First Educational Session: (left to right) Edwin W. Hoover, Dr. Henry Brown, The Udylite Corporation; Edwin C. Rinker, Sel-Rex Precious Metals, Inc.; Al Korbelak, Plating; Fred Fulforth, educational chairman; Raymond F. Vines, session chairman; Ezra A. Blount, Products Finishing.

Fig. 7 — (Right) Dr. Abner Brenner served as moderator of a panel composed of most of the speakers, during a two-hour question-and-answer period. Shown with Dr. Benner are: (front row, left to right) Al Korbelak, Plating; P. B. Lonsbury, Walton & Lonsbury; Edward F. Foley, Enthone, Inc.; E. A. Blount, Products Finishing; Dr. Henry Brown, Edwin W. Hoover, The Udylite Corp.; C. F. Waite, King-Seeley Corp.; and C. F. Paulson, Permutit Co.; (second row) Dr. Ralph F. Muraca and Dr. Martin Quaely.

Fig. 8—At the close of the formal question-and-answer period, the discussion continued in informal groups such as the one shown, in which ideas were being exchanged between Dr. Brenner and several of the A.E.S. members.

Fig. 9—(Below, left) This view, taken during the M.F.S.A. Luncheon and Business Meeting, shows (left to right) Rudy Hazucha; Charles Berry; A. N. Braun, president, M.F.S.A.; and A. P. Munning, past president, M.F.S.A.

Fig. 10—(Below, right) A view of the Speakers' Breakfast held prior to the Fourth Educational Session. (Left to right) Al Korbelak, Plating; Jean Garcia-Rivera, National Bureau of Standards; Frederick Fulforth, Dr. Abner Brenner, National Bureau of Standards; C. F. Waite, King-Seely Corp.; C. O. Hutchinson, Nubian Industrial Division of the Glidden Company; E. R. Bowerman, session chairman; and E. B. Saubestre, Sylvania Electric Products, Inc.

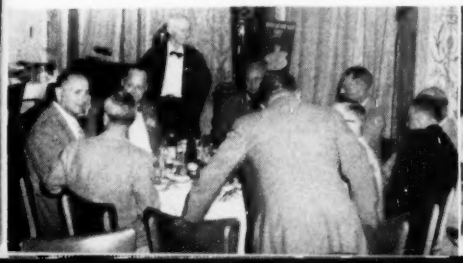


Fig. 11—(Above) A view of the A.E.S. Branch Secretaries' Luncheon presided over by Executive Secretary D. Gardner Foulke. George B. Hogaboom and A.E.S. President Franklyn J. MacStoker, both branch secretaries for many years, can be seen in the left foreground.

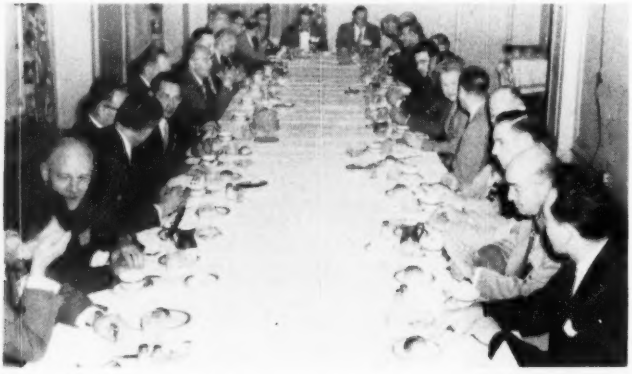


Fig. 12 — (Left) Partial view of the A.E.S. Research Committee assembled for luncheon. Dr. Donald M. Price, Chairman, and Dr. E. J. Serfass are seated at the far end of the table, facing the camera. Also in attendance (right foreground) can be seen Mrs. Florence Marquardt who has faithfully recorded the proceedings of A.E.S. conventions for several years.

Fig. 13—(Below) One of the many special events of the Convention was the Ladies' Educational Session (and breakfast) sponsored by Lea Manufacturing Company. Mr. R. Crane of Lea spoke to the ladies on the subject, "What Every Woman Should Know."

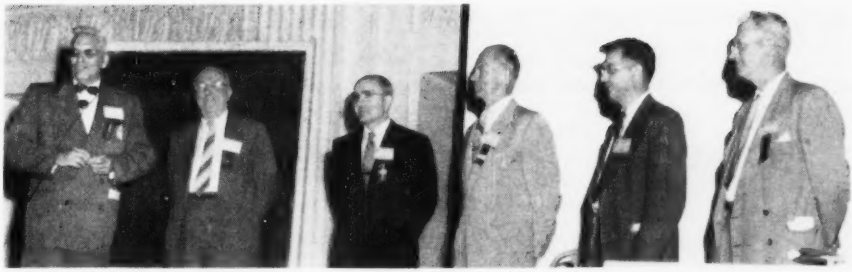


Fig. 14—(Above) At the close of the final business session, Fred Fulforth installed A.E.S. Officers. Shown (left to right) Fred Fulforth, Franklyn J. MacStoker, past president; Dr. Samuel Heiman, 3rd vice president; Clyde Kelly, 2nd vice president; Dr. Ralph A. Schaefer, 1st vice president; Dr. George P. Swift, president.

Fig. 15—(Right) The Columbus Branch brought to the Convention the winning branch exhibit. As can be noted in this photo, a wide variety of finishes on an equally wide variety of products proved to be the winning combination for the Columbus Branch — many-time exhibit winner.

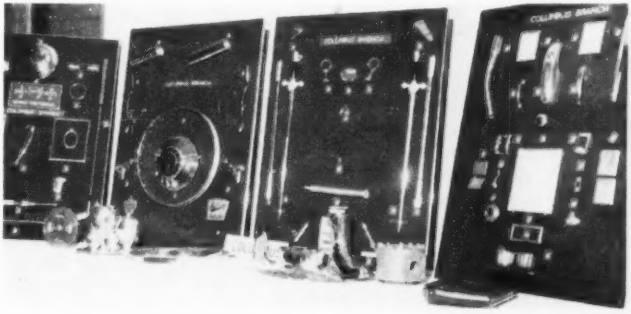


Fig. 17—(Below) Shown in this photo are (right) A. E. Matthes and (center) Dr. G. Elssner, both of Langbein-Pfanhauser Werke, A-G, Dusseldorf, Germany; (left) Duncan W. Barton, Products Finishing.
(All photos by PRODUCTS FINISHING)

Fig. 16—(Below) A partial view of the branch exhibit which won second prize for the Boston Branch.

Plan Your and

By THOMAS J. MENZEL

THOMAS J. MENZEL, metal finishing consultant on the staff of the Jack S. Steele Company, Philadelphia, has been identified with the finishing industry since 1943.

He was graduated from Hudson College of St. Peter's College, and has completed special courses at New York University.

He has been chief chemist of Kirkman Borax Soap Company, Division of Colgate - Palmolive - Peet Company. Experience more intimately associated with the problems of the electroplating industry was gained during his association with the Hanson-Van Winkle-Munning Company as analytical chemist, plating chemist, and manager of the electroplating section of the laboratory.

In his work with Jack S. Steele Company, Mr. Menzel will be able to apply his experience in and knowledge of electroplating and related processes to the solution of problems involving process and plant planning layout, and construction.

IN building a home or factory, we do not purchase some cement, bricks, two-by-fours, sash, and so on, and start construction. Rather, competent planners and architects are consulted and a plan is formulated. The very same logic applies to the starting or modernization of a plating and anodizing room, polishing and buffing room, tumbling and burnishing section, heat treating, cleaning and pickling area, painting and enameling department.

Today's business man, recognizing competition and the value of sales appeal, is constantly demanding a better finish economically applied to his products. The present day washing machines are an excellent example of the required sales appeal. Essentially the washing machine is functional, yet we can well imagine that the finest mechanically-operated washing machine, if produced with a drab dress, would find few buyers. So manufacturers must produce a better article plus a pleasing appearance in order to obtain greater public appeal for their products.

Let us consider the requirements and problems in designing one finishing department in a manufacturing plant—the plating room. Where shall the plating room be located? No longer is the plating department looked

Finishing Facilities Operations

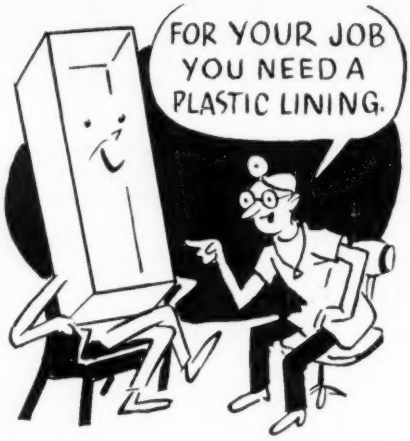
upon as a necessary evil to be situated in some basement or space unfit for other plant processing. Rather, it is rightly considered an integral part in the production of the overall product. The selection of its site is the beginning of the problem. If possible, the area should be positioned near the previous operation on the parts or the subsequent handling, in order to achieve straight line processing. Consideration must be given to the available services; such as gas, water, air, electricity, steam (low and high pressure). Disposal of drainage and reducing its toxicity is an ever present problem.

Since products necessarily differ from one manufacturer to another, and the degree and kind of finish is different, it is impossible to treat the designing of plating rooms in other than general terms. It is the task of the planning engineer, whose knowledge of plating must be exceedingly broad, together with the electrical and mechanical engineers and the architects, to design a custom plating room to meet specific requirements. These men must learn the reasons for each electrodeposit, determining whether it is functional, abrasion resistant, corrosion protective, decorative, or all of these.

Upon learning the kind of basis metal to be processed, the requirements of the finish and the anticipated production, the consultants can then advise on methods of cleaning preparation, types of electrolytes and sizes of treatment tanks. The suggested dimensions of the plating room are next considered, re-

Fig. 1—The wrong way to plan a plating installation.

Fig. 3—After design considerations are firmly established, details of equipment specifications can be considered.



serving space for storage of work in process, area occupied by treatment tanks and allied equipment, proper aisle accommodations and, in any good plan, an area to be allocated for future expansion. The plating industry has had a rapid growth and there are new methods and developments continually bursting upon us. We must plan for today and tomorrow.

The plan should give detail as to the type of floor that will prove satisfactory from a viewpoint of structural strength, protection from corrosive acids and alkalis, and the workers' comfort and safety. Faulty floor construction has resulted in safety hazards to the workers, damage to goods, lowered production and even interruption of production, and the final high costs of reconstructing or repairing.

By the very nature of the electroplating baths and the corresponding treatment tanks, corrosive, toxic and objectionable fumes may be released. Considering the well-being of the workers, and for the purpose of protecting expensive equipment and the stored processed work itself, proper ventilation must be installed. Advice is necessary on the amount of exhaust that is required and the heating or cooling of the corresponding make-up air.

The pros and cons of employing a passageway in the flooring for services, such as steam, water, or ventilation to the various treatment tanks, should be considered.

The selection of the proper tanks and their linings in conjunction with types of solutions and electrolytes which they will contain is most important. At present, there are available various linings some of which are rubber, plastic, glass, stoneware, lead,

Fig. 2—The plating room nobody wants.

polyvinyl-chloride and polyesters from which to choose to insure successful plating operations.

Availability and economics dictate the choice of heat exchangers employed in warming or cooling the processing solutions. Steam, gas, refrigeration and electricity by means of coils, jackets, external heat exchangers, immersion heaters, are the conventional methods used. Too often heating of the baths becomes a very high cost that is not truly recognized. Today many manufacturers insulate the heated tanks in order to conserve heat and allow for shorter heat-up periods.

The current used in a plating room is high amperage — low voltage direct current, furnished by a generator or rectifier. The planners should consider the definite applications for the use of one or the other. Only upon investigating the overall picture can trustworthy and unbiased recommendations be made. The distribution of current throughout the plating room is carried by rectangular or round bus bars which must be of sufficient cross section to carry safely the necessary current. If a number of plating tanks are fed from a single power source, it is necessary to install rheostats to allow for different potentials and current densities. Assuming the d.c. power to be 6 volts, and 2 volts are required across a given electrolyte, then a 4-volt drop rheostat should be recommended. It is necessary to know the type of electrolyte before recommendations can be made as to the proper rheostat.

Control of the temperature of a processing solution is usually necessary in order to maintain close limits of brightness and thickness of deposit. There are automatic controls available which will save the cost of installation in a few months.

In any good plan for a plating room, consideration for filtration of the plating solutions is necessary. Some baths require occasional and others, continuous filtration. The capacity and construction of the filter is of greatest importance.

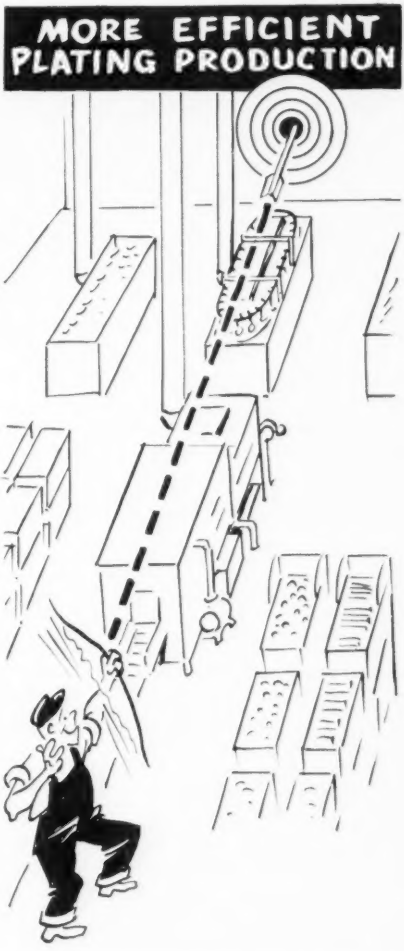


Fig. 4—Advance planning makes possible attractive arrangement as well as effective utilization of space.

Bearing in mind production rate and

Fig. 5—Power supply and distribution are always important factors effecting installation cost and economy of operation.

then as in building your home or factory, the most suitable equipment may be purchased and construction started.

type of parts, the planners can advise the use of manually-operated still tanks, barrel plating equipment or automatic plating.

Once a comprehensive, unbiased and reliable plan has been formulated,

As an addition to the series of six bulltins issued last year, **APOTHECARIES HALL CO.**, Waterbury 88, Conn. has issued **BULLETIN B-7** entitled, **BUFFING COMPOUNDS.** The bulletin contains information about the complete line of grease bars, including among other types, tripoli and white compounds.

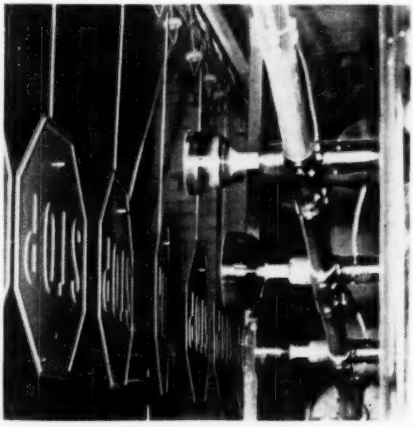
RANSBURG NO. 2 PROCESS. A new 25 minute, 16-mm, color-sound film explains the Ransburg No. 2 Process of electrostatic painting and shows many production line applications.

Available upon request to the **Ransburg Electro-Coating Corp.**, Barth & Sanders Aves., Indianapolis 7, Indiana, this movie is recommended to those interested in factory production line painting operations.

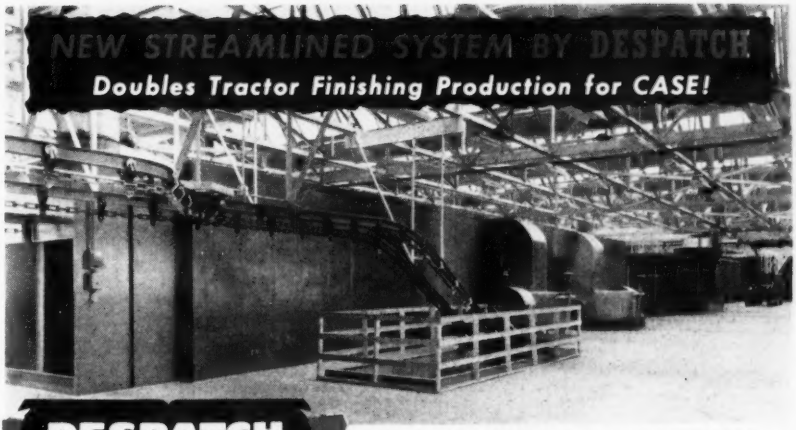
Following a brief history of painting methods from the brush to the spray gun, the new, electrostatic atomizer is explained. This is an all-electric, airless system—no compressed air is used, the paint being atomized by electrostatic force.

The film shows a wide variety of applications of the No. 2 Process by means of views made in various manufacturing plants.

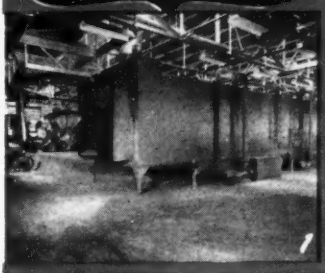
Ransburg's laboratory test facilities are also shown—16 conveyorized units where new applications are proved for production line installation. Demonstrations of other Ransburg electrostatic coating processes are inserted here to remind viewers of Ransburg's complete services to the industrial painting field—Electrostatic Detearing and the No. 1 Electro-Spray Process (the one that uses conventional automatic spray guns).

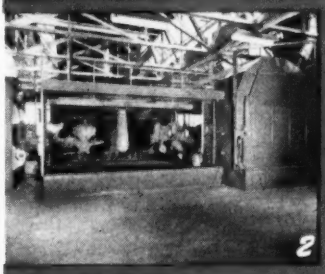


Miro-Flex Company, Inc., one of the nation's leading manufacturers of traffic and street signs, uses the Ransburg No. 2 Process.



DESPATCH





A FINISHED TRACTOR *every 5 minutes!*

Tractor finishing at the J. I. Case plant, Rock Island, Ill., has been doubled and quality of finish raised to a new high with this modern finishing system designed, built and installed by Despatch. Housed in a new, well lighted building the system is giving Case tractors a rich, durable baked on finish in the familiar Case Flambeau Red. The operation includes washing, painting and finish baking.

1. 600-ft. continuous conveyor enters 3-stage washer where tractor gets a 160° F. phosphate wash, cold water mist bath, and 180° F. hot water rinse.
2. Tractors are spray painted in staggered water wash booths. Paint is heated to 170° F. —eliminates need for thinner and allows closer spraying to cut down overspray.
3. A lasting, weather resistant finish is baked on at 225° F. in this 96-ft. oven heated by steam from the Case central steam plant. Emerging from the oven, tires and other accessories are added.

Let Despatch Modernize Your Finishing Operations

Replace your obsolete finishing system with a modern Despatch system engineered to fit your needs. Increased production, higher quality and lower costs will result.

Write, wire or call Dept. C for details.

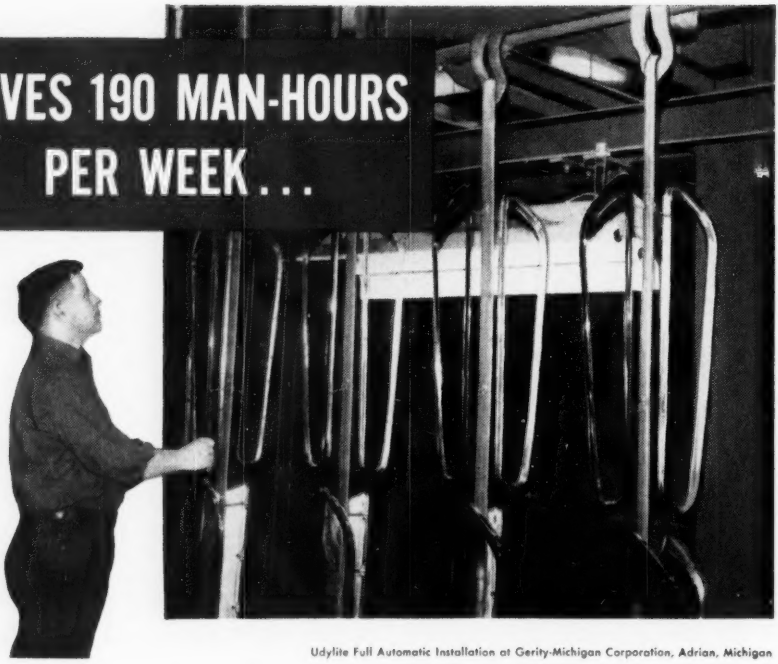
DESPATCH OVEN COMPANY

Minneapolis Office: 619 S. E. 8th Street

Chicago Office: 4554 N. Broadway

Sales Offices in all Principal Cities

SAVES 190 MAN-HOURS PER WEEK...



Udylite Full Automatic Installation at Gerity-Michigan Corporation, Adrian, Michigan

AT GERITY-MICHIGAN WITH
UDYLITE *Full Automatics!*

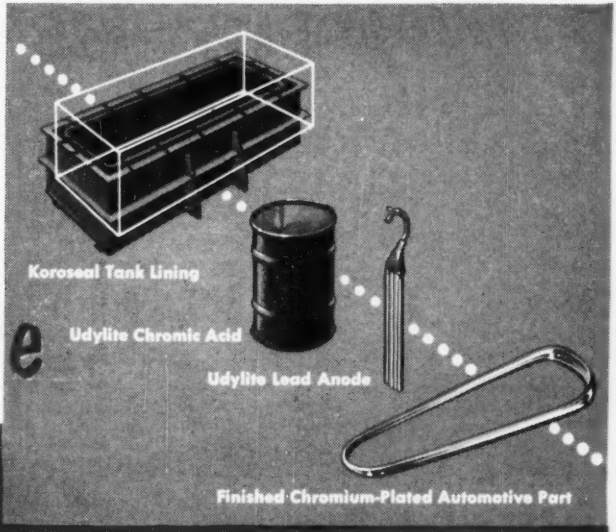
While chromium plating automotive parts on a two-shift basis, Gerity-Michigan Corporation showed direct labor savings of as much as 190 man hours per week using Udylite full automatic equipment.

But that's not all! They have effected substantial cost savings through smoother flow of materials, reduction in nickel buff, better and more uniform plate and lower scrap losses.

Why don't you investigate full automatic plating the Udylite Way. See how your Company, too, can profit by lowered costs . . . savings in manpower. Contact your Udylite Technical Man or write today to THE UDYLITE CORPORATION, DETROIT 11, MICHIGAN. *West of Rockies, L. H. Butcher Company, Los Angeles, California.*

PIONEER OF A BETTER WAY IN PLATING

THE *Udylite* CORPORATION
DETROIT 11, MICHIGAN

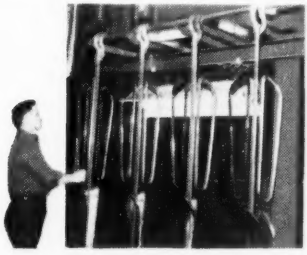


Udylite

Supplies . . .

Assure a good start toward a perfect finish!

Here's automotive parts of Gerity-Michigan Corporation on their way to a perfect finish—thanks to Udylite automatic plating equipment.



In chromium plating . . . supplies are as vital as the process! That's why it pays to get Udylite.

Koroseal Tank Linings resist nearly all acids—particularly chromic . . . and they will not contaminate solutions. They do not oxidize or plate up, and are unaffected by oil or grease.

Udylite Lead Anodes are manufactured from newly-mined virgin metals, insuring longer anode life. Furnished in 8 shapes, with 7 types of hooks, to suit every need.

Udylite Chromic Acid undergoes rigid quality control methods . . . to assure you uniformity regardless of the quantity you need.

Udylite Sulphuric Acid—66° —well stocked for prompt delivery.

For the finest in chromium supplies or any other material, equipment or processes you need, look to Udylite for availability and service.

THE UDYLITE CORPORATION, DETROIT 11, MICHIGAN. *West of Rockies L. H. Butcher Company, Los Angeles, California.*

PIONEER OF A BETTER WAY IN PLATING

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

Spotlighting FINISHING Progress

Plastics in the Plating Room

WITHIN the last few years the use of plastic engineering materials in the plating room has been steadily increasing. This fact was brought out by Dr. D. Gardner Foulke in a paper entitled "Plastics as Plating Room Engineering Materials" presented at the 39th Annual Convention of the American Electroplaters' Society.

According to Dr. Foulke, it is only very recently that plastics have become actual engineering materials. At first restricted to use as protective coverings for tanks and pipes, plastics may now be used as tank, pipe, or plating barrel construction materials.

Plastics can be divided into two classes ac-

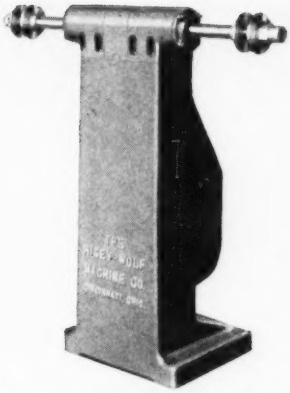
MARVIN L. KRONENBERG, the contributor of this month's "Spotlighting Finishing Progress" feature, is a native Chicagoan, and received his B.S. degree from the University of Chicago in 1950. One year later he was awarded his M.S. degree in Physical Chemical from the same university.

He was employed by a Chicago job plating shop as an electroplater for two years while still attending the university. He worked briefly as a chemist for the Ford Motor Co., Aircraft Engine Division, and has been employed as research electrochemist in the Electrodeposition Section of the National Bureau of Standards since September, 1951.

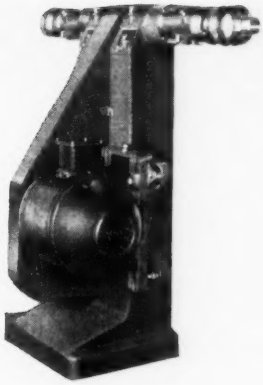
Mr. Kronenberg will soon sever his connection with National Bureau of Standards to serve his country as a member of the Armed Forces.

Marvin L. Kronenberg
Electrochemist, Electrodeposition Section
National Bureau of Standards

A Monthly Digest of Current Technical Progress Indicating Significant Trends and Developments in the Finishing Industry



Front view of Buffer with open-type spindle mounted on two ball bearings. Recommended for higher speeds and where utmost freedom of operation around wheels is required.



Rear view of Buffer with encased-type spindles mounted on four ball bearings. Recommended for heavy duty service. Note simplicity and rigidity of motor mounting.

HERE'S HOW

HISEY BUFFERS ARE MADE!

There isn't much to a buffer—a spindle and a pedestal, with a Motor to drive it. For long, trouble-free production, however, these units, especially the spindle, must be right.

The HISEY spindle has a large, one-piece alloy steel shaft mounted on ball bearings. The ball bearings are all locked individually on the shaft and lubricated by oil controlled by sight level gages. Bearing housings are sealed—dust and dirt cannot get in and oil cannot get out.

Brass nuts with Acme (flat-top) threads clamp the wheels. The soft nut will wear, prolonging the life of the more expensive shaft indefinitely.

V Belts transmit power from motor to shaft. Spindle speed can be changed by merely substituting smaller or larger motor pulley. Any standard power motor can be used.

The cast iron pedestal is not mere bulk, but scientifically designed and proportioned for rigidity, yet affording ample foot room for operator.

HISEY Buffers are made in sizes from 4 to 30 H.P.

Write for Catalog 72 PF today!

Hisey THE HISEY-WOLF MACHINE CO.
CINCINNATI 8, OHIO
Division of The Cincinnati Electrical Tool Co.

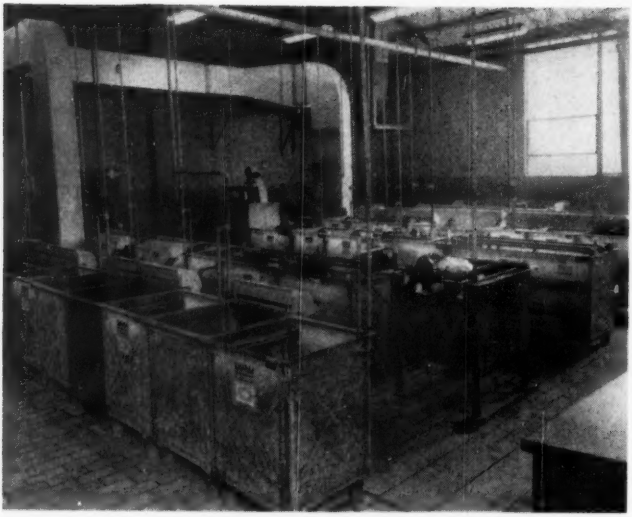


Fig. 1 — Fiber glass-polyester tank installation. *(Photo courtesy The Chemical Corporation, and American Electroplaters' Society)*

cording to the type of molecular structure. Thermosetting resins are made up of three-dimensional molecules, and thermoplastic resins have essentially linear structures. Thermosetting resins can be used for higher temperature operation but generally they are less chemically resistant than thermoplastic resins. Among the plastics used for plating room materials, polyester, phenolic and furane resins are thermosetting: whereas polyvinyl chloride, polyethylene, Lucite and Saran resins are thermoplastic.

Tanks and Tank Linings

Plastics are being called upon more and more to meet the need for strong, corrosion resistant, non-conducting tank materials necessary for high speed plating, electropolishing and bright nickel plating. At present the polyester resins reinforced with glass fibers are finding greater application than other plastics. Among the advantages of such products are: relatively low cost, long life, high temperature operation (210 deg. F), ease of repairing, fairly good corrosion resistance (except for strong alkalies) and light weight. An example of a fiber glass polyester installation is shown in Fig. 1. These tanks were cast from standard steel molds. Reinforcement is provided by steel strips coated with polyester.

A material also finding increasing use and which can be employed where greater corrosion resistance is required is unplasticized polyvinyl chloride. Unfortunately it is hard and brittle when used alone, and is more expensive and more difficult to repair than polyester. The maximum operating temperature is 160 deg. F. Lack of strength also limits its use to smaller tanks. Incorporation of plasticizers tends to minimize some of the disadvantages but also tends to reduce the chemical resistance.

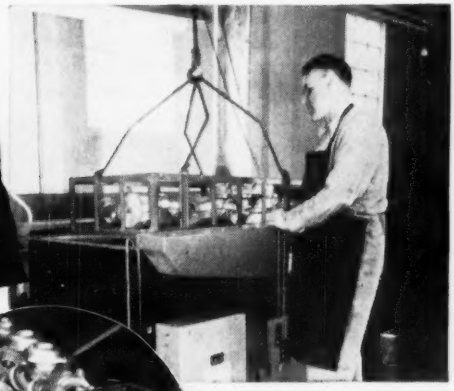
Now that high temperature Lucite has been developed the use of Lucite has been greatly expanded. The material is available in sheet form up to two inches thick and is especially adaptable to smaller, laboratory-size tanks. High temperature Lucite can resist attack from all acids up to 50 per cent concentrations at temperatures as high as 220 deg. F.

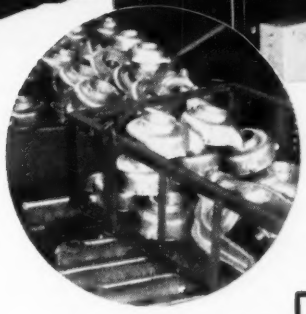
Other organic materials such as polyethylene, Teflon and Kel-F which

ENGINEERED SERVICE

PHILLIPS

POWER TOOL MANUFACTURER CLEANS CASTINGS, STAMPINGS, MACHINED PARTS, FASTER AND MORE THOROUGHLY WITH A PHILLIPS DEGREASER





Skilsaw reports improved cleaning before painting and assembly.

Above: Metal parts are thoroughly cleaned in Phillips high efficiency Model 60 degreaser. Inset shows condition of parts *after* degreasing.

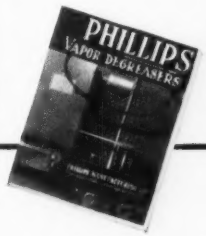
HERE is another case illustrating the high cleaning efficiency of Phillips degreasers. Skilsaw, Inc., Chicago, uses a Phillips Model 60 electric batch-type machine to clean both aluminum and iron castings, steel stampings, shafts and screw machine parts. These parts must be thoroughly cleaned before painting and assembly of the finished product. Among the types of soil removed are coolants, kerosene, drawing oils, and just plain shop dirt.

Skilsaw reports that the Phillips unit cleans their parts better, as well as 3 to 4 times faster than their former method. Thus production is speeded up and better control is assured over the quality of the finished product.

Check into the time and money you can save with Phillips Vapor Degreasing. Our representative will be glad to discuss your parts cleaning problem with you.

SEND FOR YOUR COPY OF THIS NEW BULLETIN

Describes and illustrates Phillips engineered metal cleaning equipment.



Phillips

3457 TOUHY AVENUE • CHICAGO 45, ILLINOIS

MANUFACTURING COMPANY

ENGINEERED METAL CLEANING EQUIPMENT

are unusually resistant to chemical attack have not enjoyed great success as tank lining materials. This has been mainly due to poor adhesive qualities and in some cases to excessive porosity.

Ventilating Equipment

Unplasticized polyvinyl choride has found considerable application in duct work because of its light weight and good chemical resistance. The initial cost is relatively high but the life expectancy is quite long and very little maintenance is necessary. An example of polyvinyl chloride ductwork is shown in Figure 2.

The polyester-fiber glass combination is finding increasing use in duct work mainly because it is considerably less expensive than the unplasticized polyvinyl chloride. Its inability to withstand strong alkalies does not present a great problem here since ventilating equipment does not have to resist the high chemical concentration found in plating baths.

Another material worth mentioning in connection with duct work is called Caryduct. It is made of asbestos and a silicate binder. Alkalies and hydrogen fluoride are injurious to this material. It is fairly light and can be assembled quite easily.

Protection of exhaust fans is often forgotten. These can be adequately protected when covered with phenolic-resin, rubber or neoprene.

Other Applications

Lucite is finding increasing use in barrel plating. Other materials in use as barrel equipment include phenol-formaldehyde resins, bakelite, melamine and Lucoflex.

Plastics have also replaced cotton anode bags in plating baths where extreme values of pH and high temperatures considerably shorten the life of cotton anode bags. Spun Nylon is satisfactory for alkaline baths and spun Dynel is well adapted for acid solutions. A close weave is desirable in both materials for proper filtration.

Plastics are finding increasing use in piping systems. Many different thermoplastic and thermosetting materials have been used successfully in these systems. In addition to some of the materials noted before, polystyrene, copolomers of vinyl-vinyledine chloride and Saran plastic should be mentioned.

For steam pipes, ovens and heaters, coating with silicone paints is strong-

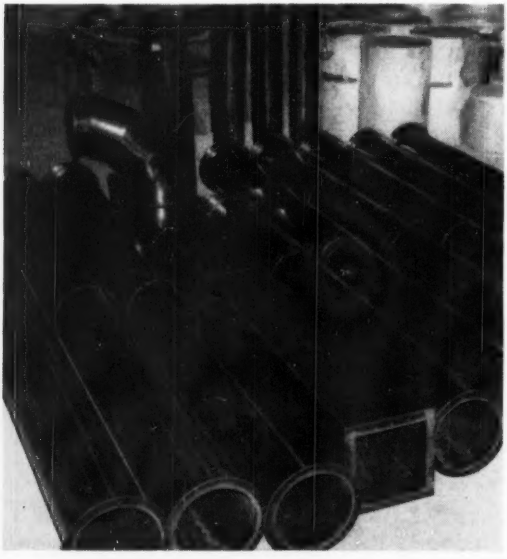


Fig. 2 — Typical polyvinyl chloride resin duct work.
(Photo courtesy Atlas Mineral Products Co. and American Electroplaters' Society)

"BUCKY" Says....

for best results you can't beat

BUCKINGHAM
POLISHING
AND BUFFING
COMPOSITIONS

- Stainless Steel Composition
- White Finish
- Tripoli
- Chrome Coloring Composition
- Greaseless Composition
- Emery Cake
- Brass Coloring
- Emery Paste
- Burring Compound
- Grease Stick
- Spray Pastes Stainless Steel Tripoli

Representation in Major Cities

Write Dep't C for Samples

The BUCKINGHAM PRODUCTS Co.

14100 FULLERTON AVE. • DETROIT 27, MICH.

ACCEPTED
Salt Fog
CORROSION TEST UNITS
BY INDUSTRIAL

Standard size No. 1 Industrial Salt Fog Testing Cabinet. Larger sizes are engineered to suit requirements.

for over-all economy . . .

You have nothing to lose—and much to gain—when you make salt fog tests in an INDUSTRIAL cabinet. These cabinets are built to meet A.S.T.M. B-117-44T salt spray test, also Army, Navy, and Air Force standards.

Consider these features:

- Lucite nozzle with fixed orifice that does not corrode or clog.
- Rubber-lined box for protection against corrosion.
- Accurately controlled enclosed heating.
- Fully insulated for heat economy.
- Air by-pass valve to clear cabinet before inspection of specimen.
- Exhaust flange at rear.
- Air compressor with oil filter. (Cabinet can be connected to other air dryer.)
- Air-operated cover lifter (extra).

INDUSTRIAL FILTER & PUMP MFG. CO.

5904 Ogden Ave., Chicago 50, Illinois

ly recommended. These coatings are not only attractive but prevent accelerated corrosion, which occurs at elevated temperature, much better than other type paints.

Unplasticized polyvinyl chloride dipping baskets and Lucite Hull cells have extended the use of plastics to smaller, more specialized equipment.

For the past several years plastisols have found very wide use as rack insulators and have greatly simplified stopping off problems in plating work. Many plastisols are polyvinyl resins with an excess of plasticizer.

In concluding his paper Dr. Foulke pointed out that the fear expressed by many platers of new plastics replacing many metals and hence replacing metal finishing has not been justified during the passing years. Actually, the plater can make full use of many of the new plastics as they are developed.

* * *

Electrochemistry of Nickel

IN 1949 it was estimated that 40 million pounds of nickel were electroplated in plants and shops throughout Europe and America. This represents over 17 billion ampere-hours of nickel plating. The electrochemical reactions of this important metal as applied to industry were reviewed by Dr. W. A. Wesley of the International Nickel Company in a paper published in Industrial and Engineering Chemistry.*

The standard electrode potential of nickel indicates that we should expect nickel to be more active than copper or silver but less active than cadmium or zinc. In many cases, however, nickel seems to be passivated and acts more noble than is indicated by its standard potential.

* W. A. Wesley, "The Electrochemistry of Nickel," Industrial and Engineering Chemistry, 1952.

The PROTECTION of ALUMINUM

Drawing courtesy of Piasecki Helicopter Corporation, Morton, Pennsylvania

THE H-21 Piasecki Tandem Helicopter—the "Work Horse"—is ideally suited for rescue work in areas inaccessible by other means, and in all kinds of rough weather. For durable paint adhesion and high corrosion-resistance aluminum parts of the "Work Horse" are Alodized. The "Alodine" protective coating chemical bonds paint, extends paint life, and protects unpainted aluminum. Because of its economy, effectiveness, and ease of application, the Alodizing process is finding wide-spread use in the aircraft field and in other industries fabricating products of aluminum. Alodized aluminum meets the requirements of Military Specification MIL-C-5541. Write or call for coating and process data on "Alodine".

"Alodine" Trade Mark Reg. U. S. Pat. Off.

CHEMICALS ACP PROCESSES

AMERICAN CHEMICAL PAINT COMPANY

General Offices:

AMBLER, PENNSYLVANIA

Detroit, Mich. ***Niles, Calif.*** ***Windsor, Ont.***

The nickel salts of greatest importance to the electroplating industry are the chloride and the sulfate. Solutions of the chloride have relatively high conductance while solutions of the sulfate may be classified in the intermediate conductance range.

Electrodeposition

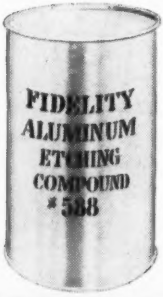
The basic electrolyte for modern nickel plating, according to Dr. Wesley, is the Watts-type bath. A typical modern Watts bath and the operating conditions are given below:

Nickel sulfate, $NiSO_4 \cdot 7 H_2O$ ---------- 40 oz./gal.
Nickel chloride, $NiCl_2 \cdot 6 H_2O$ ---------- 8 oz./gal.
Boric Acid, H_3BO_3 ------ 5 oz./gal.
Temperature (deg. F.) --120 to 140
pH ---------- 2 to 4.5
Current density 30 to 75 amp./sq. ft.
Rate of deposition (mils per hr.) ---------- 1.5 to 3.5

Nickel sulfate serves to provide most of the nickel ion content. It is the least expensive salt having a stable anion that is not oxidized at the anode, reduced at the cathode or volatilized. Nickel chloride improves anode behavior by reducing polarization; permitting higher deposition rates; forming smoother, finer grained deposits and improving the throwing power. Boric acid is used as a buffer to control pH changes caused mainly by differences in anode and cathode efficiencies. An oxidizing agent such as hydrogen peroxide or a wetting agent also is added to prevent hydrogen bubbles from accumulating on the cathode —a condition which yields pitted deposits.

The Watts bath is very susceptible to metallic impurities and to certain organic impurities. The approximate tolerence limits for common metallic impurities are 150 ppm of iron, 40 ppm of copper, 50 ppm of zinc, 2 ppm of lead and 10 ppm of hexavalent chromium. Fortunately, simple procedures

Fidelity ENGINEERED COMPOUNDS



FIDELITY
ALUMINUM ETCHING COMPOUND
NO. 588

FIDELITY No. 588 is a highly alkaline, free-flowing powder . . . that does not permit hard sludge deposits to form on etching tank . . . reduces fuming . . . provides a fast, uniform etch . . . and, in every way, does a superior etching job.

Write for help with your particular problems. No obligation!

for METAL FINISHING & PLATING

SPECIALISTS IN METAL CLEANERS AND PAINT STRIPPERS
FIDELITY CHEMICAL PRODUCTS CORP.
470 Frelinghuysen Avenue, Newark 5, New Jersey

guess
work
won't
go
on...

CYANIDE WASTE TREATMENT

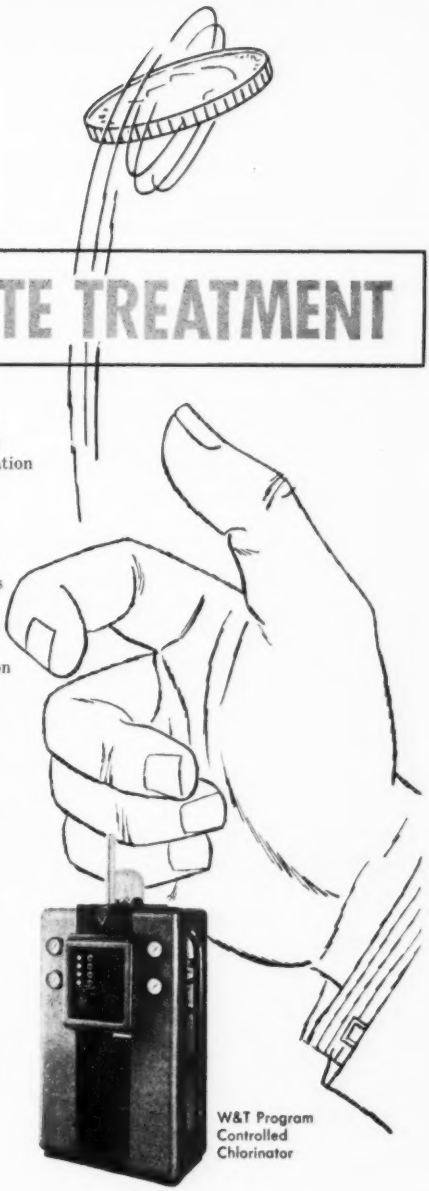
Experience, not guess work, is the basis for the success of Wallace & Tiernan's alkaline chlorination installations for cyanide waste treatment.

CHLORINATION KNOW-HOW

Alkaline chlorination — now accepted as standard cyanide waste treatment practice in the metal finishing industry — oxidizes cyanides by chlorination at controlled pH values. It is effective and economical when properly applied. Since no two cyanide waste problems are the same, the method of applying alkaline chlorination varies. Based on its experience in over 100 such installations, Wallace & Tiernan is prepared to suggest the proper equipment to suit your particular plant.

W&T AUTOMATIC CONTROL

The precision chlorinators for which Wallace & Tiernan has been known for thirty-nine years have been combined with newly developed instruments to make possible the automatic control of alkaline chlorination treatment — an assurance that cyanides are destroyed — and at minimum chemical costs.
Eliminate guess work on your cyanide waste disposal — write today for further information.



W&T Program Controlled Chlorinator

WALLACE & TIERNAN
COMPANY, INC.
CHLORINE AND CHEMICAL CONTROL EQUIPMENT
NEWARK 1, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

S-77

Are You In This Fix?

Here's A Way Out—

Let POTTER help you save money safely on Thinners

We make nothing but **thinners**—For over a quarter of a century, we have been saving money for big and little customers. They like us because we make the thinner they want at a **money-saving price.**

Let us show you how a Lacquer Thinner **SPECIALIST** can supply you with the **right** Thinner . . . and still save you money.

Just fill out form below and mail today. We'll work out a Thinner *especially for you*, and send a sample. We know we can **save** you money.

POTTER PAINT CO., INC.
CORTLAND 2, N. Y.
THINNER SPECIALISTS

The product we make is:_____
We use Lacquer Thinner for:
☐ Spray ☐ Dip ☐ Cleaning ☐ Other_____
We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____
We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____
Address_____
City_____ Zone____ State_____

are available for the removal of most harmful metallic and organic impurities.

The Watts bath is the basic formula for most bright nickel baths. Electrodeposition from the Watts bath alone yields dull grey deposits which require considerable buffing before chromium plating to produce a bright finish. Two different classes of addition agents or brighteners are added to Watts type baths to produce deposits bright enough to reduce or eliminate mechanical finishing.

The first consists of cobalt salts and organic compounds such as aryl sulfonic acids, sulfanamides and sulfanimides. If used alone, according to Dr. Wesley, these would produce a rather bright deposit upon a buffed base metal surface but not upon a moderately polished base.

The second group contains cadmium, zinc or lead salts; certain compounds of sulfur, selenium, tellurium and arsenic; and organic compounds such as aldehydes and ketones. Materials of this second group yield very bright but excessively brittle and stressed deposits. In modern bright nickel baths both classes of brighteners are used together and the defects of each type are minimized.

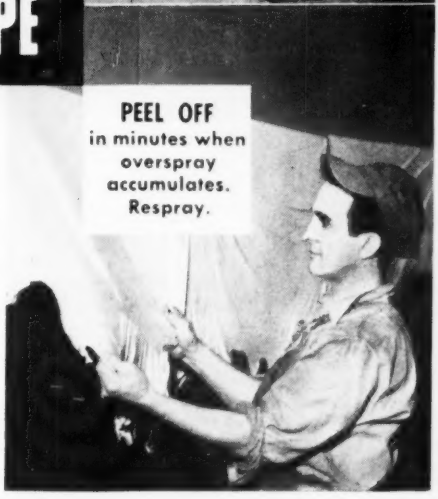
Recent experimental work has shown that an all chloride nickel bath has several advantages over the Watts bath. Deposits from the all-chloride bath are smoother, harder, stronger and finer-grained but less ductile than deposits from the Watts nickel bath. It has a lower tendency to pit and greater conductance which results in a 50 per cent saving in power. Its main disadvantages are high internally stressed deposits and a strongly corrosive electrolyte which limits the materials available for tank construction.

Within the last few years the employment of nickel plating for engineering purposes such as salvaging

WHY PAY HEAVY OVERTIME FOR "JACK-ASS" LABOR?

SPRAY ON any clean booth with your regular spray equipment.

PEEL SPRAY-BOOTHS CLEAN WITH "LIQUID ENVELOPE"



PEEL OFF in minutes when overspray accumulates. Respray.

Save labor, promote firesafety, get better illumination. Cheaper and better than hand-scraping or grease-papering.

TEST SAMPLE OFFER

new users only—5 gallon can at the drum lot price. Order today—start saving tomorrow!

BETTER FINISHES & COATINGS, INC.
268 Doremus Avenue, Newark 5, N. J.
122 East 7th St., Los Angeles 14, Calif.

DISTRIBUTED BY

Abrasive & Supply Co., Detroit, Mich.
Aviation Lubricants Co., Inc., San Diego, Calif.
Bay State Spray Equipment Co., Springfield, Mass.
C & H Supply Co., Seattle, Wash.
The Dean & Barry Co., Columbus, Ohio
Eastern Spray Equipment
c/o Mitchell-Love, Philadelphia, Pa.
Edgcomb Steel of New England, Inc.
Milford, Conn.
Eley's, Newport News, Va.
John Henry Foster Co., Minneapolis, Minn.
Franklin Supply Co., Providence, R. I.
General Spray Equipment Co., Boston, Mass.
H. J. Gettemuller Co., Inc., Baltimore, Md.
Globe Chemical Co., Louisville, Ky.; Cincinnati, O.
Grapek Co., Newark, N. J.
Harstan Chemical Corp., Brooklyn, N. Y.
The Hubbard Co., San Francisco, Calif.
Kellermann Paint Co., New York, N. Y.
Koehler Rubber & Supply Co., Cleveland, Ohio
The Lea Manufacturing Co., Waterbury, Conn.
The Leonard Co., St. Louis, Mo.
Melson Industrial Supply Co., Grand Rapids, Mich.
Metal Goods Corp., Denver, Col.; New Orleans, La.;
North Kansas City, Mo.; St. Louis, Mo.;
Dallas, Texas; Houston, Texas
Mid States Industrial Corp., Rockford, Ill.
Vic Miner Co., Toledo, Ohio
O'Donohue Sales Co., Milwaukee, Wis.
Paints & Lacquers, Inc., Chicago, Ill.
Plastic Paper Co., Los Angeles, Calif.
Porter Paint Co., Louisville, Ky.
Protective Prod. Distributors, Hamburg, N. Y.
R. W. Renton and Co., Cleveland, Ohio
Hugh Russel & Sons, Ltd., Montreal, Can.
Scobell Chemical Co., Rochester, N. Y.
Sprayway Co., Los Angeles, Calif.
Tanner and Co., Indianapolis, Ind.
In Europe:
Jenson & Nicholson, Ltd., London, Eng.

worn or overmachined parts, and electroforming has greatly increased. For salvaging worn or overmachined parts an electrolyte capable of producing a

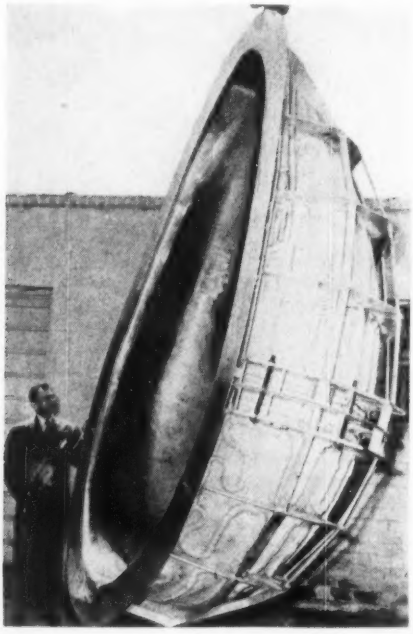


Fig. 3—Electroformed nickel mold for aircraft radome, electroformed by Bone Engineering Corporation.
(Photo courtesy International Nickel Company and American Chemical Society)

deposit having extreme hardness and tensile strength is necessary. These requirements are met with a dilute nickel sulfate, boric acid electrolyte containing some ammonium chloride. The bath is operated at a pH between 5.6 and 5.9 which is quite high for nickel baths. It is believed that the high hardness is due to the composition of hydrated basic compounds which cause the deposit to be fine grained.

Electroformed nickel has many applications. These include electrotypes, hypodermic needles, phonograph record matrices, wave guides, molds for plastic parts (see Fig. 3) and many other uses. The plating bath used can be selected to produce physical properties desired in the finished product.

Nickel Immersion Coatings

A controllable electroless nickel bath capable of forming adherent nickel deposits several mils thick was developed recently at the National Bureau of Standards. The bath consists of a buffered solution of nickel chloride to which sodium hyposulfate is added. It is operated above 90 deg. C. (176 deg. F.). The deposits are not pure nickel but contain 3-12 per cent phosphorus and will form on certain catalytic metals such as iron, gold, cobalt, aluminum and palladium. This method is well adapted for intricate small parts, inside walls of extremely thin tubing and other objects that cannot be readily electroplated.

* * *

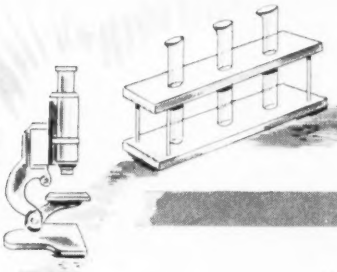
HAE Coatings on Magnesium

MAGNESIUM is well known for its light weight, relatively high strength and abundance. These factors are especially important in aircraft, in airborne equipment and in other forms of transportation where less weight means added fuel capacity. Unfortunately, despite its availablity and high strength-to-weight ratio, its use has been greatly limited mainly because of poor corrosion and abrasion resistance.

To meet the need for protection of magnesium and magnesium alloys several coatings have been developed and are in use at the present time. Of the coating methods now in use the HAE process yields one of the best protective finishes in terms of corrosion, heat and abrasion resistance. In an article entitled "Getting the Most from HAE Coatings" by Henry A. Evange-

Harrison Research

THE IMPORTANT FEATURE



that helps sell your well-made products!

Along with the design and workmanship of your product, the advantage first noticed is its smartly buffed or polished finish . . . or its sprayed or dipped protective coating. Harrison's long record of providing high-standard finishing compounds is a service constantly used by important industries.

Unseen but present in these modern finishing compounds, developed to meet special requirements, are Harrison's laboratory research facilities — an advantage that you may profitably put to use for meeting specific problems. Your inquiries will receive interested attention.

Specialists in

℞

Buffing and Polishing Compounds

Since 1922

Here's News—Get in touch with Harrison regarding new compounds for use on sisal buffs. Remarkable results are arousing wide interest throughout industry.

4A

Manufacturers of: 4A Cement and Thinner for Setting Up Wheels, Belts, Rolls · Compounds for Spraying or Dipping Stainless Steel Buffing and Polishing Compounds.

HARRISON & CO., INC.

483 GROVELAND STREET

Haverhill, Mass.

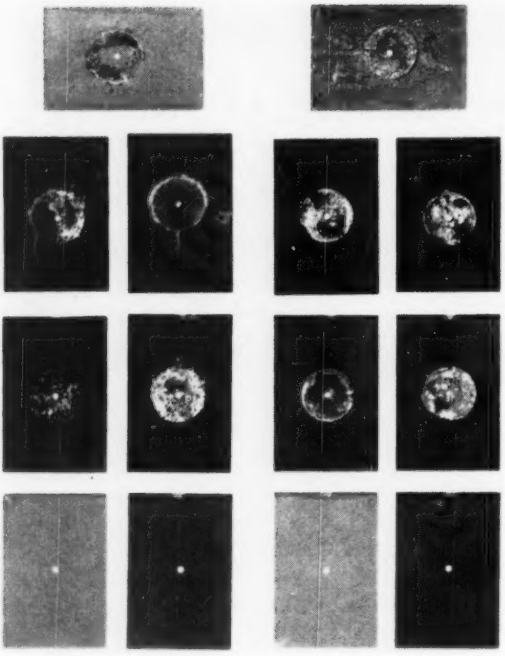


Fig. 4—Galvanic corrosion of magnesium alloy FS-1 subjected to salt spray for 5 hours. The two rows of specimens on the left were tested in contact with 24 ST aluminum discs, and the two rows on the right were tested in contact with copper discs. The 4 rows of specimens (from top to bottom) were treated as follows:

1st Row. Uncoated.
2nd Row. Processed by dichromate treatment.
3rd Row. Anodized.
4th Row. Treated by the HAE process.

(Illustration courtesy Frankford Arsenal and the American Society for Metals)

lides, inventor of the process, and Max Frager, which was published in "Metal Progress",* many helpful suggestions were offered to insure the best results from the HAE process.

At the present time the coating is produced in a bath containing potassium hydroxide, potassium fluoride, potassium permanganate, aluminum hydroxide and trisodium phosphate. The bath is operated at room temperature and at a current density of approximately 15 amp./sq. ft. The process differs from usual electrolytic treatments in that alternating current is employed. The throwing power is excellent.

A 90-minute treatment produces an extremely hard, brown coating. The coating is approximately 0.002 inch thick and provides an excellent base for paints. The process can be applied to all magnesium base alloys.

The corrosion resistance of the coated specimens is very good. When the electrolytic treatment is followed by one of the recommended organic sealing treatments and the sealed product is exposed to salt spray, up to 13,000 hours of complete protection from corrosion are obtained.

Because of its high dielectric strength and low porosity the coating exhibits remarkable resistance to galvanic corrosion also. This type of corrosion occurs when two dissimilar metals are placed in contact in a conducting medium. Under these conditions the rate of corrosion for the less noble metal is rapidly accelerated. Figure 4 compares the results obtained when copper and aluminum discs were placed in contact with an untreated magnesium alloy and a magnesium alloy having several different coating treatments. It is apparent that the HAE coating provides for better galvanic corrosion resistance than other treatments.

Abrasion tests and hardness tests

* Metal Progress, September 1952.

Luxurious

The Look of Luxury adds to a fine product the master-touch that means sure sales in a competitive market. Our specialty is the creation of individualized finishes for just such a purpose . . . finishes which are not only luxurious in appearance and feel, but are interesting, refreshing, and practical as well. For such an exacting job, we maintain a laboratory where a skilled staff of technicians concentrate on individual product requirements and produce distinctive coatings which help to insure sales success. Your own inquiries are invited. . . .

Research, Quality, Service

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS
Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

also show the HAE coating to be superior to other processes. Tests run on a Taber abrasion testing machine showed no breakdown for the HAE coating after 8,000 cycles. The dichromate and anodized coatings tested broke down after 5 cycles. The HAE coating is hard enough to abrade steel, having a hardness of Rockwell C-65.

Preliminary adhesion measurements have shown the binding strength between the HAE coating and the magnesium alloy to be so great that a force of at least 2500 p.s.i. would have to be applied normal to the surface in order to detach the coating from the base metal.

In order to make full use of the outstanding properties of the HAE coating, one must be aware of its limitations to avoid costly mistakes in actual production. One such limitation is the behavior of the coating upon flexing. A thin sheet of magnesium alloy coated by the HAE process can be bent up to 160 degrees with no noticeable damage on the tension side, but an appreciable amount of the coating will crumble and be removed on the compression side. This means that all bending and deforming operations must be completed before application of the HAE process. In addition, all the other machining operations such as cutting, drilling, and grinding should be completed so the work will be in its final form before HAE treatment. The work should also be carefully deburred before treatment to eliminate small particles that can easily break off after treatment and expose small areas of bare metal. It is a well known fact that exposing small areas of an active metal such as magnesium, when most of the surface is protected, results in more intensified corrosion at the exposed areas than would occur if no coating at all were protecting the metal.

Although the galvanic corrosion re-

to page 66→

Solventol

RESEARCH ORIGINATED *

DI-PHASE

METAL CLEANING

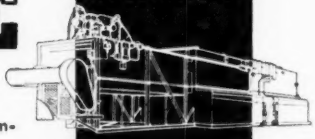
Solventol Di-phase metal cleaning processes and compositions are so fundamentally different they have been patented.

Information on these basically new metal cleaning advancements is available upon request. *Write to:*

SOLVENTOL CHEMICAL PRODUCTS, INC. • DETROIT 3, MICHIGAN

* Di-phase metal cleaning concentrates, baths and processes are covered by U. S. Patents Nos. 2,399,205; 2,399,267 and 2,583,165. Unrestricted licenses under these patents will be granted on request at established royalties.

DESIGNERS & BUILDERS OF SPECIALIZED



METAL CLEANING EQUIPMENT

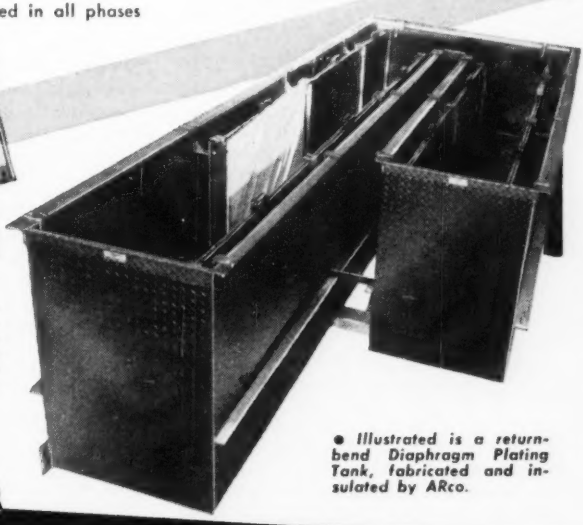
Reduce Rejects / Improve Quality

with DIAPHRAGM PLATING and ARco RUBBER LINED TANKS

● Providing for separate anode and cathode compartments, Diaphragm Plating Tanks, engineered by ARco . . . eliminate costly buffing due to roughness . . . prevent rejects due to thin spots . . . produce uniformly high plating quality.

Thoroughly experienced in all phases of electroplating, ARco engineers have an outstanding record of successful Diaphragm installations and conversions. They can help you achieve greater efficiency and higher quality production in your operations.

SEND FOR THIS VALUABLE INFORMATION NOW . . . See the many ways in which you can reduce operational costs and improve electroplating production in quality and quantity.



● Illustrated is a return-bend Diaphragm Plating Tank, fabricated and insulated by ARco.

ARco

ANYTHING CAN BE COVERED WITH RUBBER — BY ARco

LICENSED SARAN APPLICATORS

AUTOMOTIVE RUBBER CO., INC.

8613 EPWORTH BLVD. DETROIT 4, MICHIGAN

●

ARCO RUBBER PROCESSORS

4033 HOMESTEAD ROAD • HOUSTON, TEXAS

MANUFACTURERS • DESIGNERS • ENGINEERS

News about UNICHROME

Trade Mark

Many chromium plating difficulties eliminated

Over 700 commercial installations of the Unichrome SRHS Chromium Bath have provided the best testing and proving ground in the world. Case after case has shown that this bath virtually obsoletes the ordinary solution. Again and again, results have confirmed each improvement this solution offers; each difficulty it has reduced or eliminated. Here are its chief advantages:

Important chemical constituents of the bath are controlled automatically–maintaining the solution at top plating balance. This has slashed control time and maintained plating quality.

Higher plating speeds have been achieved–with plating time cut as much as 50% in some plants, and capacity of existing equipment increased.

This solution's wider bright plate range has reduced "burning" on edges and "missing" in recesses, thereby further cutting rejects.

In hard chromium operations, its greater leveling action has reduced polishing time. SRHS has also meant less loss of fatigue strength in plated steel.

Many of yesterday's headaches with chromium plating have been eliminated. If you're still struggling with an old fashioned bath it will pay you to call in a United Chromium engineer for complete facts.

Copper Platers

Improved Pyrophosphate

All platers want certain features in a copper plating process. Fast plating speed, for example.

Individual plants, however, have special problems in connection with copper plating. They, therefore, choose a process which fills not only the basic requirements of good plating operations, but also provides extra advantages which can overcome their individual problem.

To more and more platers, the alkaline Unichrome Pyrophosphate Copper process seems to supply this ideal combination of features.

FEATURES THAT MAKE DOLLARS AND CENTS

The Unichrome Pyrophosphate Copper Bath has wide current density range – which it maintains through improved make-up. This means that high plating speed and range are sustained. As for the deposits, they are fine grained and ductile. The plate is exceptionally

ECONOMY IN TEMPERATURE CONTROL COILS

No common plating room acid, except hydrofluoric, can attack tantalum metal. Unichrome Tantalum Coils, therefore, offer a money-saving means for controlling the temperature of acid solutions such as chromium plating baths. A New England company that installed two of them discovered after only one year that the coils had actually paid for themselves by eliminating cost of repair or replacement of former type of coils, and production normally lost.

Gain Extra Advantages

process provides new operating economies; gives a smoother, easier-to-buff deposit

smooth and needs little or no buffing; often only simple chemical polishing suffices for direct chromium plating.

ANSWERS TO SPECIAL PROBLEMS

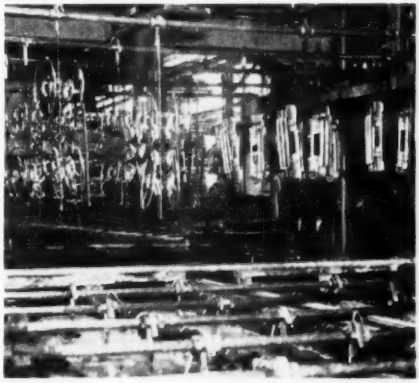
The problem of cyanide disposal grows more urgent by the week. A non-cyanide bath, Unichrome Copper helps to cut down the volumes of this toxic solution which must be treated, and the expense of treatment.

Empty nickel tanks don't earn money. Where such tanks are idle, they can be used for Unichrome Copper, since this moderate temperature bath will not harm plastic tank linings.

THE RIGHT COMBINATION TO THESE PLANTS

A tubular furniture manufacturer adopted Unichrome Copper because it deposited a smoother copper faster, and resulted in a brighter chromium finish. In addition, it permitted them to use the copper in their rubber-lined automatic nickel equipment without alteration — saving $25,000 installation cost.

A New England concern overcame roughness of copper deposits and buffing difficulties by switching to Unichrome Copper.



Features of Unichrome Copper can pay dividends in busy plating installations like this.

A bicycle manufacturer was able to figure on substantial savings from Unichrome Copper when he saw the plating speed, smoothness and ease of buffing being obtained with bicycle parts.

Bulletin CU-2 gives more data

UNITED CHROMIUM, INCORPORATED
100 East 42nd Street, New York 17, N. Y.
Detroit 20, Mich. • Waterbury 20, Conn.
Chicago 4, Ill. • Los Angeles 13, Calif.
In Canada:
United Chromium Limited, Toronto, Ont.

✓Check these reasons why

SYNTRON
Infra-red
HEATING PANELS
. . . Cut Production Time and Costs

- Made up of flat, thin strip heating elements. Throw a flat, uniform, radiating pattern of intense infra-red heat.
- They heat by direct radiation—not by reflection. No reflectors mean lower installation and maintenance costs with more infra-red heat thrown directly on the work.
- Sturdy box type design permits closer working tolerances with less power consumption. Easy, inexpensive fabrication of ovens with no cold spots.
- Syntron heating specialists can help you get better results at less cost on your own heating process. Write today for complete information—Free.

SYNTRON COMPANY
452 Lexington Ave. Homer City, Pa.

sistance of the HAE coating is extremely good, it should be remembered that all metals that come in contact with magnesium are more noble than the magnesium metal. This, of course, would cause accelerated corrosion especially at the smallest areas of exposed magnesium. To reduce the danger of forming a galvanic couple, any ferrous or copper metals used with magnesium should be zinc or cadmium plated, the plating chromated and then finally protected with an organic finish of a suitable type.

When joining magnesium with itself or with other metals by riveting, special precautions must also be taken to prevent galvanic corrosion. The magnesium alloy should be insulated at both head and shank areas. High strength plastic laminates can be used to separate the metals and anodized soft aluminum washers are recommended for insulating the rivets. Care should also be taken in selection of rivet sizes and rivet hole diameters to avoid deformation during heading. If the hole is too small, the shank, which expands during heading, can cause a crack in the coating and thereby expose magnesium.

The slight increase in volume resulting from the HAE treatment must be taken into consideration where close tolerances must be met. In one case stainless steel bolts were used in an assembly without allowing for the decreased diameter of the tapped holes resulting from the surface treatment. Since there was an extremely close fit even before the coating was applied, distortion of the tapped hole resulted, thereby causing the coating to crack and expose magnesium. Distortion can also occur when bolts are tightened excessively.

To insure good corrosion resistance the following painting system is recommended for HAE coating specimens: one coat of zinc chromate primer such

SPECS FOR NON-FERROUS FINISHING GOT YOU DOWN?

FIND OUT ABOUT IRIDITE® TODAY for finishing ZINC, CADMIUM, ALUMINUM, CUPROUS METALS

WANT CORROSION RESISTANCE? Iridite will give you better-than-specification protection against corrosion.

WANT PAINT ADHERENCE? Iridite provides a firm and lasting base for paint by preventing underfilm corrosion.

WANT EYE-APPEAL? Iridite can give you a variety of finishes, depending upon the metal being finished . . . from clear and sparkling bright or military olive drab, to attractive dyed colors.

BEST OF ALL, any Iridite finish is economical and easy to apply.

for example: IRIDITE® (AL-COAT) REDUCES NEED FOR ANODIZING

Simple chemical dip; immersion time only 10 seconds to 2 minutes; no sealing dip; color is clear or yellow depending upon your requirements; salt spray resistance equivalent to 20 to 30 minutes of anodizing, eliminates need for costly racks and electrical power.

WANT TO KNOW MORE? Write for literature and send production samples for free test processing. See "Plating Supplies" in your classified telephone directory or write direct.

Iridite is approved under government specifications.

ALLIED RESEARCH PRODUCTS
INCORPORATED
4004-06 E. MONUMENT STREET • BALTIMORE 5, MD.

Manufacturers of Iridite Finishes
for Corrosion Protection and Paint Systems on Non-Ferrous Metals; ARP Plating Brighteners.
West Coast Licensee: L. H. BUTCHER COMPANY

as U. S. Army Specification 3-201 followed by one or more top coats of JAN-E-480, Type I. The base coating should be applied to a thickness of 0.4 to 0.7 mil and the top coats to a thickness of 0.7 to 1.2 mils.

* * *

Vacuum Metallizing

HIGH vacuum metal deposition has definite advantages in certain applications. A timely paper on this subject entitled, "Vacuum Metallizing Today" was presented by J. Gordon Seiter of the F. J. Stokes Machine Company at the 39th Annual Convention of the American Electroplaters' Society.

In vacuum metallizing the metal to be deposited is heated and vaporized in a vacuum chamber and the metallic vapor is condensed to form a thin metallic film on the object to be coated. The average coating thickness is usually less than 5 millionths of an inch thick and the thickness can be controlled to one ten-millionth of an inch. An extremely high vacuum is necessary so that the metal will vaporize easily and will not be deflected from the target by collisions with other gas molecules. The work remains relatively cool during the deposition process.

Although the basic principles of vacuum deposition have been known for some time, the process was not practical until the present efficient, high-speed vacuum pumps and vacuum-tight systems were developed.

Many different metals can be deposited by evaporation. These include gold, silver, platinum, tungsten, nickel, chromium, tantalum, molybdenum and aluminum. The metal is usually melted and evaporated from a strip of tungsten filament. The tungsten filament is usually the most expensive material used in the evaporation process.

MULTI-PURPOSE POLISHING MACHINE

Horizontal Type—Hydraulically Operated

The CENTRAL HORIZONTAL POLISHING MACHINE handles long lengths, extrusions, sheets, etc., and smaller, odd-shaped pieces. Polishes extrusions and sheets their ENTIRE LENGTH. Polishing stroke quickly adjustable, 2 inches to full capacity. Has famous Hydraulic Contour Device. Standard sizes to take work 6 to 20 feet long.

- Polishes, extrusions and sheets complete, end to end.
- Simple operation. Women run them.
- Adjustable stroke 2" to full capacity.

Machines, 7 to 21 foot stroke.

FULL INFORMATION ON REQUEST.

H-M 84 HORIZONTAL MACHINE

(Guards removed to show detail) 7 to 21 foot stroke. Table 30" wide. Table oscillates at turn of valve.

CENTRAL MACHINE WORKS

72 COMMERCIAL ST., WORCESTER, MASS., U.S.A.

YOU GET THESE

extras

WHEN YOU BUY A PARKER PRODUCT

The benefits of constant research:

No Parker Product is ever regarded as "perfected." Our research staff is constantly working for improvements—in simplicity, economy and effectiveness. New ideas are field tested, and passed on to Parker customers.

The benefits of 38 years' experience:

Among the thousands of applications on all kinds of metal products in all types of plants, Parker experience has already met and solved a metal surface treatment problem like yours. Our experience can save you time, money, and trouble.

The benefits of superlative field service:

The Parker technical representative who lives near you is qualified to give you immediate, expert attention. He brings the knowledge and experience of this whole organization to your plant.

The benefits of precisely controlled manufacture:

Quality controls are rigidly maintained in the manufacture of Parker Products. You get uniform, dependable results from uniform, dependable Parker Products!

*Bonderite, Bonderlube, Parco, Parco Lubrite — Reg. U.S. Pat. Off.

Since 1915—leader in the field

Parker RUST PROOF COMPANY

2172 E. Milwaukee, Detroit 11, Michigan

BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE
corrosion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces

Tungsten becomes extremely brittle after several operations when degassed in a vacuum and is easily broken while loading. It generally lasts for 3 to 7 evaporations.

Of the metals mentioned, aluminum is the most commonly used for evaporation. It is most easily vaporized and can be readily lacquered and dyed to imitate any metallic color. In addition, it is cheap, does not tarnish easily, and does not alloy with the tungsten filament to any great extent. Mr. Seiter recommended the use of aluminum (with or without dyeing) in preference to high melting point metals or alloys whenever adaptable.

Vacuum metallizing has many functional and decorative applications. The more popular decorative applications include costume jewelry, Christmas tree ornaments, fancy wrapping papers and many other items. Because vacuum metallizing permits the use of plastics and low-cost metals, most of the above items are now manufactured for a small fraction of their former cost. The thin aluminum film is often lacquered or dyed to resemble a more expensive metal.

Functional uses include lamp reflectors, condensers, optical mirrors, camera lenses, phonograph record masters and gold stamping leaf. One of the finest accomplishments made by this process was the vacuum metallization of the reflecting mirror for the 200-inch Mount Palomar telescope (see Fig. 5). This extremely difficult task was engineered by Dr. Strong of

to page 74→

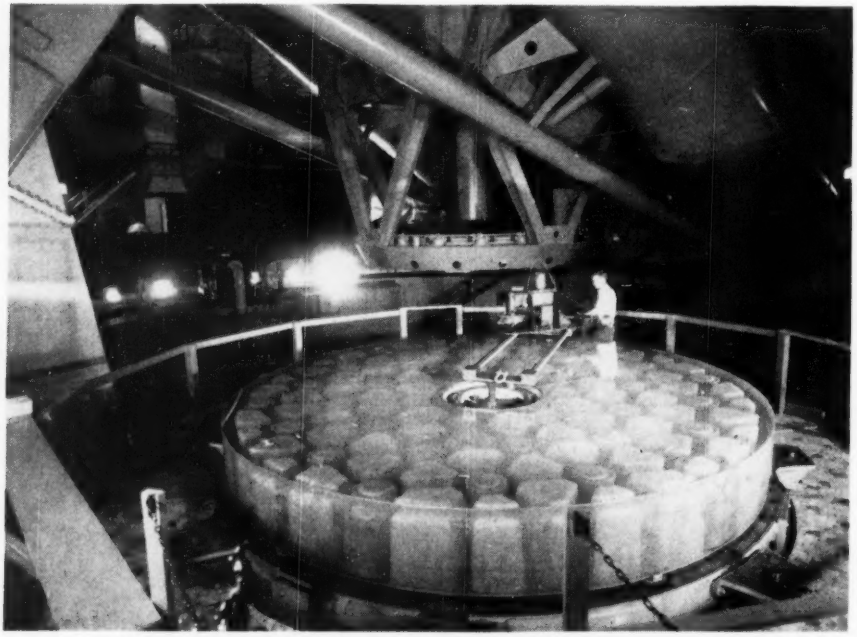


Fig. 5—A view of the 200-inch mirror for the Hale Telescope at the Palomar Observatory, made during the process of final polishing.
(Photo courtesy Mt. Wilson-Palomar Observatories)

when WASHING *means* MONEY

it's "know how" that counts!

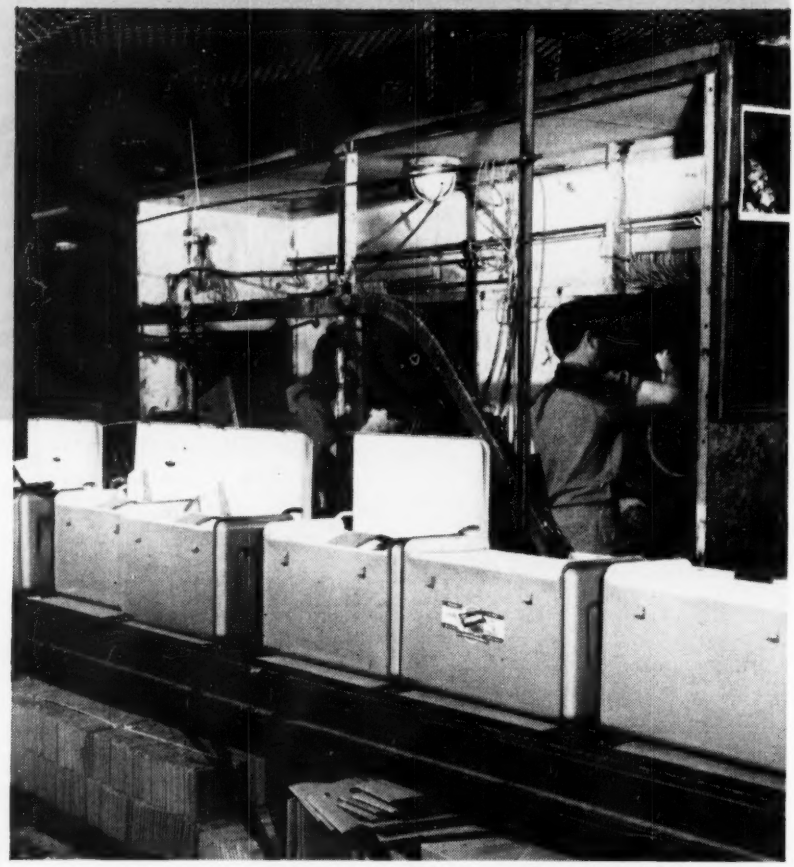
The prospector gleaned gold from rock and sand only when he knew how to wash his pan. The same holds true of industrial finishing methods. If you want the finest, call on the specialists—the men who **know how.**

INDUSTRIAL WASHING MACHINES

are designed by expert engineers to meet the exact needs of **your** particular industry. These trained specialists work hand-in-glove with **you** to design and construct the right machine for efficiency and economy. Whether your finishing process is washing, rinsing, slushing, drying, treating with Bonderite, phosphatizing or any combination of these operations, **Industrial Washing Machine** engineers can help you do the job **better.**

Find out **today** how Industrial Washing Machines can help **you.** For illustrated literature write Dept. 23.

INDUSTRIAL SYSTEMS COMPANY
Exclusive Sales Agents
for Industrial Washing Machine Corp.
New Brunswick, New Jersey



• Poloron's Thermaster Portable Refrigerators pass through spray painting booths where they are sprayed with Pittsburgh's Hammerhide Finishes on the exterior. Interiors are finished with gleaming, blue-white baked enamel. Poloron also produces a Woodland model which has Pittsburgh Wrinkle Finish on the exterior.

PPG
PITTSBURGH
PAINTS • GLASS • CHEMICALS • BRUSHES
PITTSBURGH PLATE

Picnic Products by Poloron

Are Protected with Attractive

PITTSBURGH FINISHES!

Special Polychromatic Enamels and Wrinkle and Hammerhide Finishes give these portable units added beauty and longer life

● **Since 1928,** Poloron Products, Inc., of New Rochelle, N. Y., has manufactured picnic ice boxes, vacuum jugs and other outdoor items to meet the needs of millions of vacationing and picnicking Americans.

● **Pittsburgh Finishes** have proved ideal in making these unusual products look better and last longer.

● **Poloron's** Thermaster Portable Refrigerators are sprayed with Pittsburgh Hammerhide Finishes. Interiors are finished with gleaming, blue-white baked enamel. Its Woodland model has Pittsburgh Wrinkle Finish on the exterior.

● **Poloron** also produces Woodland feather-weight vacuum jugs in one- and two-gallon sizes, as well as one-gallon Thermaster bottles. The Woodland jugs are sprayed with Pittsburgh's Green Polychromatic Enamel and the Thermaster bottles are coated with Gray Hammerhide Finish.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

FREE ADVISORY SERVICE

Poloron Products, Inc., is just one of the many manufacturers with whom Pittsburgh's technical staff has worked to develop highly specialized finishes. This broad experience may be helpful in saving you time and money. Write, wire or phone the Pittsburgh Paint plant nearest you. We'll be glad to have one of our engineers discuss your finishing problems with you at no cost or obligation.

PAINTS
• PLASTICS • FIBER GLASS

GLASS COMPANY

Johns Hopkins University. The vacuum chamber alone weighed 30 tons.

Lacquering plays an important role in vacuum metallizing. A great deal of progress has been made during the last few years in the development of colorfast and abrasive resistant lacquers and dyes. Lacquering serves several different functions. First of all it provides a smooth, shiny base coating for metal deposition by filling in cracks, small holes and other minor surface defects. Second, it prevents the outflow of gases from the material (especially for plastics) which occurs at reduced pressures, tending to hinder metal deposition. The topcoat of lacquer increases abrasion and corrosion resistance. It also provides a surface which can be dyed to any color. Aluminum, for example, can be dyed to resemble gold or copper. Since the final color is a function of dye penetration, its incorporation with the lacquer in the base coating is not recommended. This would produce color differences between recessed and smooth areas. The reflectivity of the metallic film depends upon how smooth and shiny the initial surface is and not upon the type of metal deposited.

As in electroplating, a clean surface is necessary for vacuum deposition. Before the lacquer undercoat is applied, the metal or plastic must be free from greasy films and dirt. Acetone or alcohol is recommended for removing mold lubricants. Mr. Seiter suggests also that silicone mold release lubricants be avoided since they are difficult to remove.

The preparation of glass surfaces for metallization requires special treatment to remove absorbed films and gases. Radiant heat is first applied to the glass under vacuum. The glass is then subjected to high tension bombardment. These treatments serve to drive off the absorbed substances and enable the metal to adhere to the glass. As mentioned before, the glass is also coated with silicon monoxide after metallizing to prevent the metal from rubbing off.

Vacuum deposition is yet in its early years of growth and its future possibilities are quite promising. It would be wise for the electroplater to become better acquainted with this new metal finishing tool and learn to apply its uses to his own advantage.

COUNT ME IN...ON THE FINISH!
Improved
DETROIT
HANDY "TAC" RAG
NON INFLAMMABLE
Detroit Handy "Tac" Rags remove all dust, lint and sand particles. Save time and materials. Avoid costly rejects. Ready for instant use. Never dry out or harden.
Order today from your supplier or send for sample
Standard of the FINISHING INDUSTRY Since 1934
DETRO MFG. & SALES CO., CULVER CITY, CALIFORNIA

CORRECTION

In the article, "Switch Boxes Cleaned, Dip-Enameled, and Baked Automatically," published on pages 82-83 of the April issue, the statement was made, regarding the Lithoform spray: "The 375 gallon solution is discarded daily." This statement is in error. Instead, this statement should have read: "Additions are made daily to the Lithoform spray tank to maintain a concentration of 0.3 oz./gal."

HARSHAW Iso-Fil No. 1

best of all-fibrous filtering mediums

- ★ Made of 100% pure fibrous cellulose
- ★ Exact fibre lengths maintained, permitting "sharpness" of filtration
- ★ Blended by a new-type machine which insures uniformity
- ★ Forms easily-cleaned layers which do not "slough-off"
- ★ Provides efficient depth filtration
- ★ Quickly forms a pre-coat on either screen-type filters or cloth and paper dressed presses
- ★ Rapid forming of pre-coat offers tremendous advantages in "setting"
- ★ Eliminates clogging of cloth and screen wires
- ★ Fibrous structure maintains steady flow through the filters
- ★ Especially adapted to low-cost clarification work

NOTE: When Iso-Fil No. 1 is used, the filter is "set" by using only ½ oz. of material for each square foot of filter surface, rather than the usual 4 oz. per square foot recommended when using diatomaceous earth. Usually no addition of filter material is required on the run.

Order Iso-Fil No. 1 Through Any Harshaw Sales Office

THE HARSHAW CHEMICAL CO.
CLEVELAND 6, OHIO

CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HOUSTON
LOS ANGELES • NEW YORK • PHILADELPHIA • PITTSBURGH

NEWS of the Industry

NEW PLANTS

ENTHONE, INC., New Haven, Connecticut, manufacturer and supplier of chemicals for the metal finishing industry, has announced the completion of increased manufacturing and warehousing facilities at their plant. The photograph shows the recent two-story addition. The added area amounts to 6,600 square feet. At the present time, the ground floor of this new building is being used for warehousing of Enthone products and distributed chemicals and for the enlarged Shipping and Receiving Department. Increased warehousing facilities will permit the stocking of larger quantities of Enthone compounds. Space formerly used for warehousing has been made available for the increased manufacturing requirements of the company.

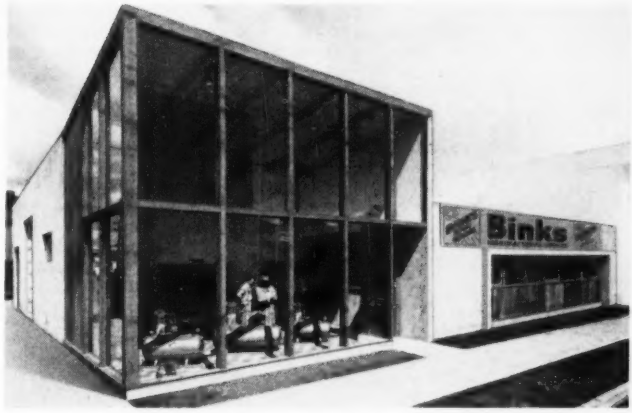
The entire second floor of this new structure is to be used for the new research and development and customer service laboratories.

New plant addition of Enthone, Inc.

Louisville, Kentucky became the newest city to have a member of the **SOLVENTS AND CHEMICALS GROUP** when **AMSCO SOLVENTS AND CHEMICALS COMPANY** of Cincinnati opened its Louisville branch office on June 1.

The new office at 660 South Fifth Street in Louisville is headed by **A. M. SCHULTEN.** Mr. Schulten, a native Louisvillean and a graduate of the University of Louisville, stated that local warehouse stocks of solvents and chemicals used in the manufacture of paint, chemicals, inks, pharmaceuticals, industrial finishes and in the cleaning of metal, would be available.

The opening of the Louisville office marks the fourteenth major industrial area to be served by the Solvents and Chemicals Group through its eleven member companies. Amsco Solvents & Chemicals Company acts as distributor for leading manufacturers of such products as alcohols, acetates, ketones, naphthas, aromatic solvents, plasticizers, waxes, naval stores, and other products.



New branch sales office and warehouse at 950 Newhall Street, San Francisco 24, Calif., of Binks Manufacturing Co. Structure uses the new "tilt-up" construction in which whole walls are poured in horizontal moulds before being "tilted up" and fitted together. Exterior trim is natural redwood.

BINKS MANUFACTURING COMPANY, maker of spray painting equipment, has announced the opening of a new Branch Sales Office and Warehouse at 950 Newhall Street, San Francisco 24, California. The new office is part of a nation-wide expansion program by Binks which now has sales offices in 24 principal cities, ten of which have warehouse facilities for faster customer service.

The new facilities provide 7,500 square feet of space, including 2000 square feet of parking space. The building contains a conference room with projection equipment, a sales and demonstration room, and offices for sales and executive employees of the branch. In keeping with the northern California location, rooms are paneled in redwood.

RICHARD P. ROSSI, a native San Franciscan, heads the new office. He is in charge of a staff well qualified to answer questions pertaining to spray painting and coating equipment and materials.

Expansion of **HERCULES POWDER COMPANY'S** plant at Mansfield, Massachusetts, now under way and to be completed by the end of this year, will make the company one of the world's largest producers of pentaerythritol, it has been announced by Dr. W. M. Billing, general manager of Hercules' Synthetics Department.

The expansion project is designed to boost the Mansfield plant output of pentaerythritol from 18 million pounds a year to 24 million pounds, an increase of 33 per cent, Dr. Billing said, adding that the expansion was brought about by increased demand for pentaerythritol in the paint and varnish industry.

Although Hercules has its own captive use for pentaerythritol in the manufacture of its Pentalyn Resins, a greater portion of the current production is now being sold.

The **O'DONOHUE SALES COMPANY,** Milwaukee distributor of industrial finishing supplies and equipment, has relocated its general offices, laboratory, and No. 1 Milwaukee warehouse in the building formerly occupied by the Regan Engineering Company at 3812-18 N. Hubbard St., Milwaukee, Wisconsin.

COMPANIES

NORTON COMPANY'S new six million dollar grinding machine plant suffered damage estimated at over one million dollars in a disasterous 10 minute tornado which hit Worcester, Mass., June 9. The new plant was in the direct path of the twister which killed 73 persons in the Worcester area and did damage of untold millions of dollars.

Damage was limited primarily to the building itself. The steel decking of the roof was blown hundreds of yards, windows were blown out, siding stripped from the steel framework although the structural members themselves suffered

practically no dagage. One week after the disaster, Norton Company officials reported the office back to normal, the roof almost completely closed in, and 38 of the 40 departments concerned back in operation.

Fortunately nobody was killed at the plant and only about eight were injured, some seriously.

SERFASS CORPORATION, 524 West Broad Street, Bethlehem, Pennsylvania, has announced that its plant is equipped to apply coatings of rhodium to non-conductive materials by using the vacuum technique. Rhodium is being applied on a commercial basis upon glass and other non-conductive substances to meet specifications of transmittancy and hardness. Rhodium is a material that has high resistance to chemical attack and because of its high reflectivity is excellent for mirrors and reflecting surfaces when they must withstand corrosive chemical atmospheres. Coating thicknesses can be applied to give controlled reflectivity or transmittancy within 5 per cent.

Serfass Corporation is equipped to apply rhodium as well as other metals that can be vacuum deposited, such as aluminum, gold and silver. The work is performed on a job basis. Some of the objects that have been coated are glass, microscope slides for analysis of blood, mirrors for optical apparatus, reflectors for telescopes, glass go and no-go gauges, and glass bearing surfaces.

Rhodium coatings when deposited upon glass and subjected to baking become extremely hard, and the coating, therefore, is ideal for making thin hard surfaces to resist wear or friction. In addition to the vacuum coating facilities, Serfass Corporation is equipped to measure reflectivity, porosity and transmittance of coatings.

General office of the company is located at 442 Elm Street, New Haven, Connecticut.

Vacuum coating apparatus for depositing rhodium and other metals in the plant of Serfass Corporation.

1953 is a double anniversary year for **BARNSTEAD STILL & STERILIZER CO.**, of Boston, one of America's first producers of stills, sterilizers, demineralizers, and other hospital and laboratory equipment. As Barnstead completes 75 years of uninterrupted production, **DR. ALONZO J. SHADMAN**, president of the firm, celebrates his 75th birthday, too!

Barnstead's history is truly a colorful one. The firm got its start in 1878, when a well-known Boston doctor discovered that his work required a steady supply of pure distilled water. The next question was where to get the necessary equipment, and the doctor searched long and diligently for a firm which could produce a still of the type he wanted. After making some inquiries, he approached a master plumber named Barnstead, who made the still.

The doctor was so pleased with the efficient operation of his still that he began to spread the word about Barnstead's ability, and soon the plumber was spending much of his time in the production of water stills for medical use.

As Barnstead Still & Sterilizer grew, its products became famous in medical circles throughout America. At one point the firm got an unexpected boost from Dr. Alexander Graham Bell, inventor of the telephone, who had a small Barnstead still of his own. "I have kept up my drinking of distilled water and I attribute

When you can SEE the difference . . . IT'S TOO LATE!

Prime with STANTITE!

One switch box was primed with Stantite, the improved wash primer, before top coating; the other was not. Exposure discovered the difference and proved Stantite's strong resistance to corrosion and rust creep. And after years of research in Stanley laboratories there are other differences you can see right off . . . Stantite handles easier; it's easier to mix and easier to spray. Add these advantages to its excellent adhesion to all surfaces and its adaptability to most top coats. The result: a wash primer that insures your finish. For full details about spraying Stantite and clear Stantite for dipping write Stanley Chemical Co., 21 Berlin Street, East Berlin, Connecticut.

STANLEY

Industrial Coatings

STANLEY CHEMICAL

LACQUERS SYNTHETICS JAPANS ENAMELS

my almost perfect health largely to it," he wrote in a letter to Barnstead. "I have a little still with which I make what I need." Of course, Barnstead was quick to insert this testimonial in its early advertising.

Most of Barnstead's early customers were doctors, hospitals, and health resorts, along with a few manufacturers of storage batteries. At that time, of course, the American chemical industry was still in its infancy, and its need for stills and similar equipment was as yet very small. Later, this industry was to become one of Barnstead's biggest customers.

As the demand for pure-water equipment increased, Barnstead began to branch out into the production of demineralizers as well as water stills. According to Barnstead experts, who are asked about the difference between distilled and demineralized water hundreds of times a year, distilled water is completely free from all types of impurities, including minerals, organic gases, and bacteria, and is used where sterility and absolute freedom from impurities is essential. Demineralized water, on the other hand, is simply de-ionized—that is, the mineral salts are removed, but the organic and bacteria content of the water remains the same. Demineralized water is the least expensive kind of purified water, and may be used in thousands of applications where sterility and freedom from organic impurities are of little importance.

An interesting example of the varied ways in which Barnstead stills have been used over the years is the fact that Admiral Richard E. Byrd took several of them along on both of his Antarctic expeditions. He used the stills to produce pure water in the polar wastes.

Today, Barnstead produces hospital sterilizers and autoclaves, water baths for laboratory work, and storage tanks of metal and pyrex for distilled and demineralized water—and, of course, stills and demineralizers ranging in capacity from ½ galon to 1000 gallons per hour. At present there are more than 75,000 installations of Barnstead water stills alone. Barnstead's customers include schools, colleges, clinics and hospitals throughout North and South America (as well as many in other parts of the world), research laboratories, chemical and pharmaceutical plants, manufacturers of television tubes, mirrors, cosmetics, batteries, ice, processed foods, and many others even more diverse. Many electroplaters

NEWCOMB-DETROIT

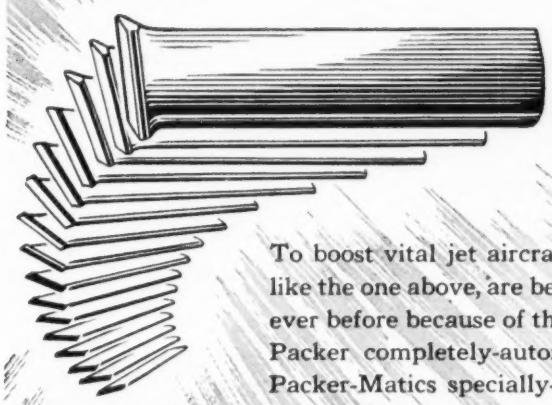
PIONEERS IN ENGINEERING, MANUFACTURE AND INSTALLATION OF

INDUSTRIAL OVENS
SPRAY BOOTHS
PARTS WASHERS
DUST COLLECTORS
AIR SYSTEMS

ESTABLISHED 1912
DETROIT DIVISION—GRAND RAPIDS DIVISION—
NEWCOMB INDUSTRIES LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5761 Russell St.,
Detroit 11, Mich.
TR 3-2100

Jet blade production increased



by
PACKER-MATIC
MACHINES

To boost vital jet aircraft production jet blades like the one above, are being produced faster than ever before because of the speed and efficiency of Packer completely-automatic buffing machines. Packer-Matics specially-designed to do this one job are finishing at a high rate of production, to exacting specifications, without a single finishing reject. Packer machines are also hard at work buffing, grinding, or de-burring reciprocating engine parts for planes, tanks, and vehicles, casings for shells, and many more items essential to defense. If higher finishing room production can help you, whatever you make, write today for more information about the versatility of continuous, indexing, or straight-line Packer-Matics: the Packer Machine Company, 400 Center St., Meriden, Conn.

AUTOMATIC

PACKER-MATIC

AUTOMATIC MACHINES FOR BUFFING • POLISHING • DEBURRING • GRINDING

THE PACKER MACHINE COMPANY • MERIDEN, CONN.

and electrotypers use Barnstead demineralized water in plating solutions; similarly, offset printers use demineralized water in press fountains and in photographic solutions. In boilers, air-conditioning systems, and Diesel locomotives, Barnstead demineralized water prevents scale formation and clogging of spray nozzles and water tubes. Barnstead equipment is also widely used in the atomic energy program.

BART MANUFACTURING CORP., Belleville, New Jersey, has been awarded contracts exceeding $1,500,000 as the sub-contractor to nickel plate pipe on the multi-million dollar contract recently awarded to the Walsh-Holyoke Division of Continental Copper and Steel Industries, Inc.

Steel pipe and fittings will be nickel plated on the inside diameter by the Bart nickel plating process which was developed by the company for the A.E.C. during World War II. Large quantities of this patented nickel lined pipe were used in the original A.E.C. project which developed the first atomic bomb, after Bart developed new plating techniques and equipment and pioneered in the installation of nickel lined pipe.

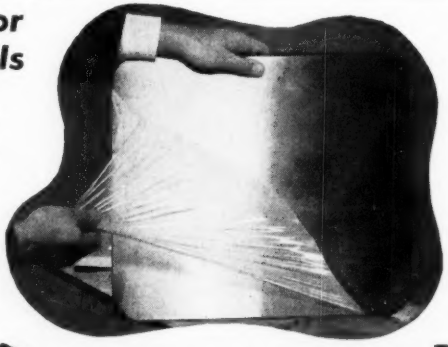
INDUSTRIAL TAPE CORPORATION, New Brunswick, N. J., manufacturer of Permacel and Texcel pressure sensitive tapes, has changed its corporate name to **PERMACEL TAPE CORPORATION**, according to an announcement by Edwin J. Fitzpatrick, president.

Mr. Fitzpatrick, in making the announcement, stated, "Permacel Tape Corporation is a change in name only. The organization will continue to manufacture industrial tapes under the long-accepted Permacel brand as well as the familiar Texcel Cellophane Tapes and Bondex Hot Iron Tapes, as in the past."

TUMBLING SALES & SERVICE CO., Greenwich, Connecticut, has announced that the use of the name, Tesco, has been discontinued and that the trade name, **ESBEC**, will apply henceforth to the **ESBEC TUMBLING DIVISION** in Meriden, Connecticut, and to a variety of equipment and supplies marketed by the firm.

A Strippable Plastic for the Protection of Metals

Striplastic is a protective plastic applied by spraying, dipping or rolling. It is used on stainless steels, high polished metal sheets, sheets in cold working or drawing, tools, dies and parts, and on sheets or metal parts before packaging. It protects against scratching and abrasion, and against rust. Also available as a booth coat protection.



THE

STRIPLASTIC COMPANY
10828 QUEBEC AVE.
CLEVELAND 6, OHIO

Among many advantages, it is nontoxic, possesses great tensile strength and is easily stripped off in one piece. Write for complete information on this new strippable plastic.

prior to MACHINING

prior to PLATING

METALWASH designs and manufactures washing, pickling, drying, and phosphating machinery for the widest range of applications.

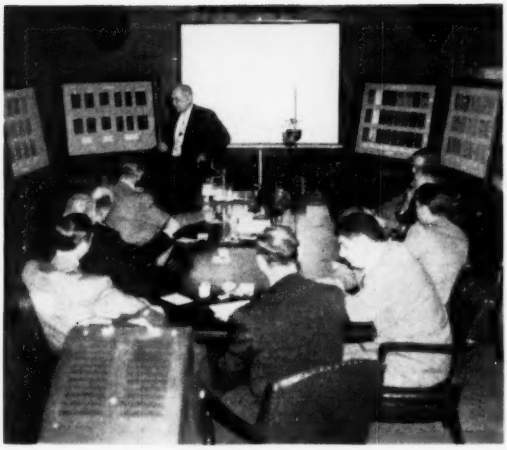
prior to PAINTING

prior to HEAT TREATING

prior to ENAMELING

METALWASH
MACHINERY CORPORATION

915 North Ave., Elizabeth 4, N. J.
Representatives in principal cities



Paul O. Blackmore, sales promotion manager, Interchemical Corp., shown conducting forum on air conditioner finishes.

The Kold-Hold Manufacturing Company, Lansing, Mich., manufacturer of refrigeration equipment and products in the industrial and domestic heating fields, has announced a change in its corporate name to **TRANTER MANUFACTURING, INC.** James R. Tranter, Kold-Hold president and general manager who will continue in the same capacities in the company that now bears his name, pointed out that the name change will have no effect on ownership of the company or its corporate structure.

The Platecoil Division of the company, established to manufacture and merchandise Platecoil process heating and cooling plates, will continue to operate as a division of Tranter Manufacturing, Inc.

FREE!
61 PAGES OF FACTS FIGURES PHOTOS ON
BARREL FINISHING
The MOST COMPLETE story on barrel finishing ever told: Opens your eyes to amazing new developments in barrel finishing equipment - compounds, abrasives. Write Today!
A-7
ALMCO Supersheen
AMERICA'S LARGEST MFGR. OF ADVANCED BARREL FINISHING EQUIPMENT, MATERIALS & COMPOUNDS
ALBERT LEA, MINNESOTA

Engineering and other key personnel in the air conditioner industry were recently invited to attend technical meetings sponsored by the Finishes Division of **INTERCHEMICAL CORPORATION.**

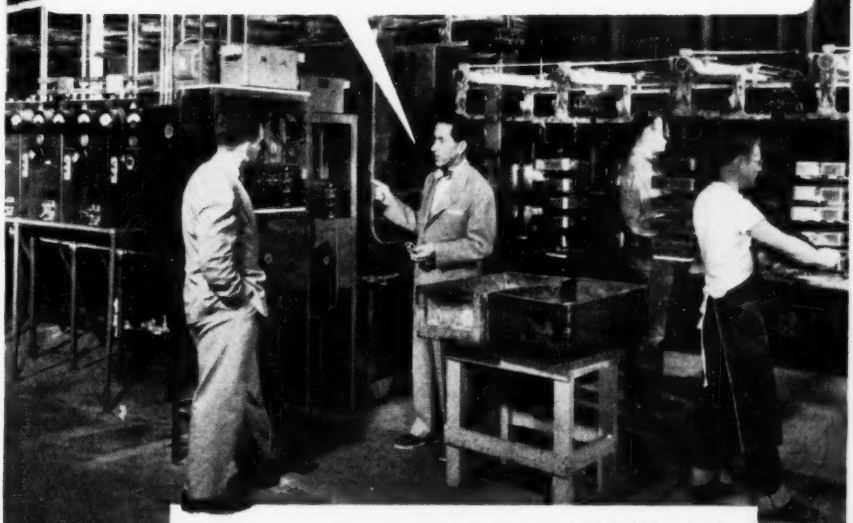
Four meetings were held in New York, two in Cincinnati and one in Chicago for the purpose of presenting to the air conditioner industry the results of a four-year development program on new, greatly improved corrosion resistant finishing systems for refrigeration and air-conditioning equipment.

The meetings were planned and conducted by K. J. Carson and Howard Ellerhorst, sales executives in the Atlantic and Central Districts respectfully. Principal speaker was Paul O. Blackmore, sales promotion manager, who presented an illustrated lecture and performed chemical demonstrations showing the mechanism of corrosion, followed by a story on how Interchemical used these principles in its long-range development program.

Test methods were discussed and test results were shown on several outstanding finishing systems. The meeting was concluded with a question and answer period and tours of the Interchemical plants and laboratories.

Sales and distribution of the recently improved Econaway Abrasive Belt Splicer formerly available from Econaway Mfg. Co., are now being handled by

How do we get exceptionally level deposits of bright copper?
....H-VW-M'S *Wes-X with this PR control!*



When you want a *really* level bright-copper deposit, H-VW-M's Wes-X with the PR Process* is the unbeatable method. You see, inorganic Wes-X gives a copper deposit brightness, while PR periodically reverses the current to produce a smooth deposit. Together they produce a finish sufficiently bright and smooth so that preliminary polishing and subsequent buffing can be practically eliminated.

Yet, when exceptional levelling *isn't* necessary, Wes-X alone will *still* produce bright deposits at fast plating rates. Now, for the first time, we have in Wes-X a brightener that completely eliminates contamination caused by the breakdown of organic compounds in high speed cyanide copper plating baths. No matter what your copper plating requirements, Wes-X will do a consistently better job.

Bright copper plating with Wes-X and PR is only one of many results of over eighty years of constant electroplating development—a continuous policy summed up in H-VW-M *Platemanship* . . . your working guarantee of the best that industry has to offer—not only in plating processes—but in every phase of plating and polishing.

* PR Plating Process is a development of Westinghouse Electric Corp., covered by Patents #2451340 and #2451341. License Agreements are available through H-VW-M.

PLATEMANSHIP

Your H-VW-M combination—of the most modern testing and development laboratory—of over 80 years experience in every phase of plating and polishing—of a complete equipment, process and supply line for every need.

For full information on Wes-X bright copper plating and the PR Process® ask for Technical Instruction Bulletin.

HANSON-VAN WINKLE-MUNNING CO., MATAWAN, N. J.

PLANTS AT: MATAWAN, N. J. • ANDERSON, INDIANA
SALES OFFICES: ANDERSON • BALTIMORE • BOSTON CHICAGO • CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS • LOS ANGELES • LOUISVILLE • MATAWAN MILWAUKEE • NEW YORK • PHILADELPHIA • PITTSBURGH ROCHESTER • SPRINGFIELD (MASS.) • STRATFORD (CONN.) UTICA • WALLINGFORD (CONN.)

H-VW-M

INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

AGET-DETROIT CO., 801 Main St., Ann Arbor, Michigan.

The splicing apparatus permits users of large numbers of abrasive belts (such as woodworking, furniture, metal, and synthetics shops) to effect marked reduction in belt costs while avoiding keeping heavy inventories of finished belts on hand.

A. P. Yonis

THE PIONEER RUBBER CO., Willard, Ohio, has announced the appointment of The Andrew Company, 277 Broadway, New York City 7, as representative for the New England and Mid-Atlantic states. This appointment is one of a series of moves to meet the need of closer contact between Stanzoil distributors and users.

A. P. YONIS, who heads The Andrew Company, is familiar to many as the former general sales manager of The Edmont Manufacturing Co., from which he resigned to form The Andrew organization. Prior to his association with Edmont, Mr. Yonis was sales manager for the Glove Division of Hood Rubber Company.

NEW POSITIONS

The Du Pont Company's Finishes Division, has appointed **GEORGE H. BERLIN, JR.**, former refinish sales manager in the Cleveland regional office, to the managership of industrial sales, San Francisco.

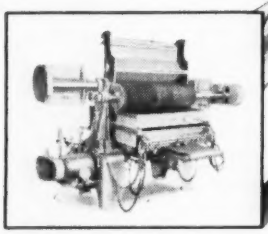
Mr. Berlin, a graduate of the University of Pennsylvania with a degree in chemistry, has been with Du Pont since 1936. He has had plant, laboratory, and sales experience.

HANSON H. HODGE, assistant refinish sales manager, Wilmington, will fill the vacancy in the Cleveland office.

Additional changes in assignments announced include **EDWARD W. LLOYD** from industrial sales supervisor to industrial sales manager in the Dallas region-

SURFACE FINISHING HAND TOOLS?

The Model 206-A is equipped for either magnetic or mechanical holding fixtures.



IMPROVE YOUR OPERATIONS with the Model 206-A

CLAIR

SURFACE FINISHING MACHINE

This machine will perform any surface finishing operation from rough glaze to highly colored mirror reflecting surface. It will accommodate either flat or contoured products.

Write for details

CLAIR MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.

MAKE KOCH RESPONSIBLE

for ALL COMPONENTS of your COMPLETE *Conveyorized* FINISHING SYSTEM

When KOCH holds single responsibility all components are perfectly dove-tailed, eliminating costly delays and last minute changes.

This results in an expertly installed system which pays dividends in peak operating efficiency and lowest possible maintenance.

Turn your problems over to KOCH finishing experts now. It may well be your wisest decision of the year.

* * *

KOCH also builds baking ovens, spray booths, metal washing equipment and air makeup systems. Write for Folder K-10.

▶ PHONE, WIRE OR WRITE TODAY!

GEORGE KOCH SONS, INC.

EVANSVILLE, INDIANA

al office; **G. KENNETH STOUT,** industrial sales manager, Boston, to assistant to the regional manager in an advisory capacity until his voluntary retirement, December 31, 1953.

MALCOLM G. PETERSON, industrial sales supervisor, Boston, has been promoted to regional industrial sales manager, Boston, to replace Mr. Stout.

JOHN T. GEOGHEGAN, former industrial sales representative, Atlanta, has been named sales supervisor in the Philadelphia sales office.

Hanson-Van Winkle-Munning Co., Matawan, N. J., manufacturer of electroplating and polishing equipment &

W. M. Teets (left), Robert Morriss

supplies, has announced the appointment of two new eastern sales representatives: **W. M. TEETS** as representative for the New Jersey area and **ROBERT MORRISS** as representative for the New York metropolitan area.

Mr. Teets moves over to New Jersey from the metropolitan area where he has been a representative for H-VW-M for the past two years. Prior to that time, he spent a year in training at the company laboratory at Matawan. He is a graduate of Lafayette College, B.S. in Electrical Engineering, 1949, and served in the USAAF during World War II.

Mr. Morriss moves down to New York from Stratford, Conn., where he was manager of the H-VW-M warehouse for four years. He formerly worked in the purchasing department as a buyer, and has been with the company for seven years.

The appointment of **CHARLES MURPHY,** formerly associated with Plating Products Company of Newark, as middle western representative for Federated Metals Div., American Smelting and Refining Company, 120 Broadway, New York 5, N.Y. has been announced.

Federated Metals supplies copper, cadmium, zinc, lead, tin, and Conductacore anodes, as well as many other metals and alloys, to manufacturers of metal products and metal products finishers.

EARLE W. COUCH has been elected president and treasurer of The Lea Manufacturing Company, Waterbury, Connecticut, to succeed **ROBERT S. LEATHER** who was named chairman of the board. Other officers elected were: **RICHARD P. CRANE,** vice president; **HENRY L. KELLNER,** secretary; **WILLIAM D. STARR,** assistant treasurer; **ELLSWORTH T. CANDEE,** asst. secretary.

ROGER E. GAY, president of the Bristol Brass Corporation, Bristol, Connecticut has been elected to the Board of Directors of The Lea Manufacturing Company. He fills the vacancy created by the death of Louis M. Fuller, who was president of The American Abrasive Company, Westfield, Massachusetts.

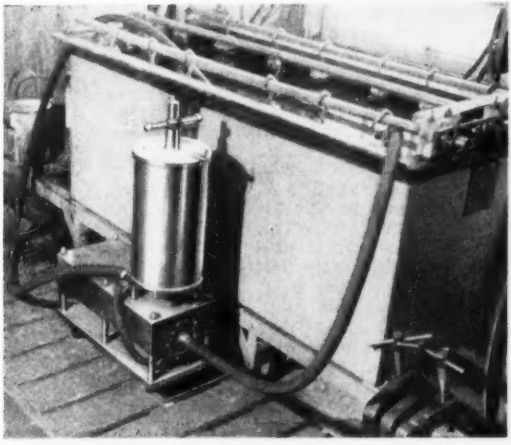
Mr. Gay is also president of the American Standards Association in New York City, and a director of The Bristol Brass

Earle W. Couch (left), Roger E. Gay

Corporation, Bristol Traction Corporation, Bristol Associates, Inc., Bristol Bank & Trust Company, Research Corporation of New York, and American Hardware Corporation.

Here's how to cut your losses

get better finished plated work — save time and labor



The *"Sealed-Disc"* Filter will remove all dirt, dust, and sludge from your plating solutions. You will no longer worry about pitting, spotting, poor adhesion, formation of nodules, etc.

More and more platers testify to the remarkable savings in operating time and labor that the *"Sealed-Disc"* Filter gives them. These cost-minded platers get better finished plated work and have found that their solutions last l o n g e r. *"Sealed-Disc"* Filters, designed to meet plating room requirements, are smaller, more compact and portable, than ordinary conventional filters.

Regardless of the size or type of your installation, there's a *"Sealed-Disc"* Filter to "fit your job". You can depend on a *"Sealed-Disc"* Filter for positive, trouble-free performance that's proof against even the invisible impurities that cause nodules and porousness, proof against losses caused by rejects and reworking. Write for complete details or contact your regular plating supplier.

ALSOP

ENGINEERING CORPORATION

Filters · Filter Discs & Sheets · Mixers · Agitators

807 Keen Street Milldale, Connecticut

OTHER ALSOP PLATING ROOM EQUIPMENT

We manufacture a full line of Mixers and Agitators covering a complete range of sizes, for mixing, blending, and dissolving. Stainless Steel Mixing Tanks are also available in a wide range of capacities. For full details and illustrations write for your free catalog.

He is a former member of the Economic Policy Advisory Committee of The National Association of Manufacturers and a former NAM director.

RODGER C. SWIFT has been appointed an abrasive engineer by Norton Company, Worcester 6, Mass., and assigned to the central Illinois territory. He has been connected with Norton since 1940. Since 1946 he has been in foreign sales covering the South American sales territory making his home in Rio de Janiero, Brazil.

JOHN W. McCUE, who formerly covered the central Illinois territory, has been assigned to the Chicago area formerly assigned to **WILLIAM N. JOVE** who will now join the staff of field engineers at the Chicago District Office.

Two new men have joined the industrial sales staff of The Lowe Brothers Company, paint and varnish maker, Dayton, according to an announcement by E. F. Teyber, industrial sales manager.

Earl Rivers (left), Fred J. Marshall

EARL RIVERS, who has been active in paint sales for nearly ten years, has been assigned to the southern district headquarters in Atlanta, Ga. He recently served two years in the U. S. Air Force.

FRED J. MARSHALL joined the firm as an industrial sales representative and is now serving an extended area in lower Michigan. He is making his headquarters in Detroit, Michigan.

Both men have a thorough background in paint finishes and application which enables them to better serve industrial accounts with Lowe Brothers modern industrial finishes and application techniques.

Three service engineers have been added to the staff of the Customer Service Department at Frederic B. Stevens, Inc., Detroit 16, Michigan. They are **ROBERT R. SEAMAN, DONALD E. LIND,** and **HOWARD MICHAELS.**

R. R. Seaman is a graduate of the University of Michigan and also holds a degree in electrical engineering from the University of Detroit. He will specialize in electrical service consulting for automatic electroplating installations.

Prior to joining Stevens, Seaman was employed by Hanson-Van Winkle-Munning in the Detroit District Office. He is a member of American Institute of Electrical Engineers and Engineering Society of Detroit.

Donald Lind will specialize on automatic equipment and will spend a considerable amount of time on installation work and periodic good-will service calls.

He joins Stevens with considerable experience as a customer service and in-

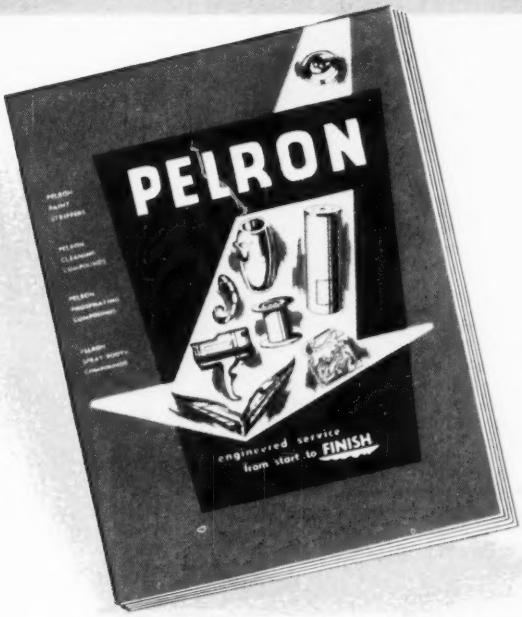
For Platers, Silversmiths, Jewelry Mfgrs., Makers of Watches, Clocks and Electronics and other metal finishers.

Supplied in straight or crimped brass, steel, nickel silver or stainless steel wire in sizes .0025 to .006 and in bristle, fibre or Nylon. Special sizes and shapes to order.

catalog and price list.
Write (Dep't. P) on your letterhead for

DIXON & RIPPEL, INC. KINGSTON, N. Y.
ESTABLISHED 1856

NEW FINISHING BULLETIN



EVERY PRODUCTION MAN WILL WANT A COPY

Here is a bulletin that shows you how to cut finishing costs and increase profits. It shows how PELRON services and products make it possible for manufacturers to perform cleaning, phosphating, paint stripping and spray booth operations faster, more economically and with a better end-product as a result. Send for your *free copy* today!

PELRON® CORPORATION

7740 W. 47th Street • Lyons, Illinois

CHICAGO • MILWAUKEE • CLEVELAND • INDIANAPOLIS • ROCK ISLAND • SOUTH BEND • CINCINNATI • ST. LOUIS • BUFFALO • DETROIT • GRAND RAPIDS • NEW YORK

Industrial Oils and Chemicals of Better Production at Lower Cost.

Donald E. Lind (left), Howard Michaels, Robert R. Seaman.

stallation engineer, having been employed in that capacity for eight years with the Cross Machine Company, Detroit, and Standard Cap & Seal Corporation, Chicago. Prior to that he was employed in the Production Engineering Department of Bastian-Blessing Company, Chicago.

Mr. Lind received his education at Northwestern University, Evanston, Illinois, and also completed the tool and die apprenticeship requirements at Lake Shore Engineering Works, Marquette, Michigan.

Howard Michaels has been with the Stevens organization for some time, on service work. As a member of the Customer Service Department he will perform final installation and periodic maintenance inspections and will be available for engineering consultation work on the best methods of revamping existing machines to do additional types of work.

He was employed in the General Maintenance Department at Packard Motor Car Co., Detroit, before coming with Stevens. He is a member of the Detroit Chapter, American Electroplaters' Society and the Engineering Society of Detroit.

Recent changes in personnel or position at Enthone, Inc., New Haven, Connecticut, include the appointment of **HUBERT M. GOLDMAN** to the newly created post of assistant to the sales manager and technical engineer: **FRANCIS A. SCHNEIDERS** to the position of technical service manager; and the addition of **LAWRENCE J. DURNEY, JR.** and **EDWARD F. FOLEY** as research chemists in Enthone's research laboratories.

Hubert Goldman has been associated with Enthone, Inc., for over six years as a chemical service engineer and technical service manager. He is known to many members ot the American Electroplaters' Society and other technical societies by virtue of the papers which he has presented before local meeting groups and at national conventions. He is past president of the Bridgeport Branch, American Electroplaters' Society and a member of the American Chemical Society, Electrochemical Society, and Alpha Chi Sigma. Prior to his connection with Enthone, Inc., he was active in the metal finishing field for 10 years as technical director of a large job finishing concern and chemist and plating supervisor in a Stamford, Connecticut manufacturing organization.

Francis A. Schneiders, a graduate chemical engineer from Lehigh University, has been with Enthone, Inc., for three years in the Research and Service Engineering Laboratories. His field serv-

YOU

can *rely* on

RANDOLPH

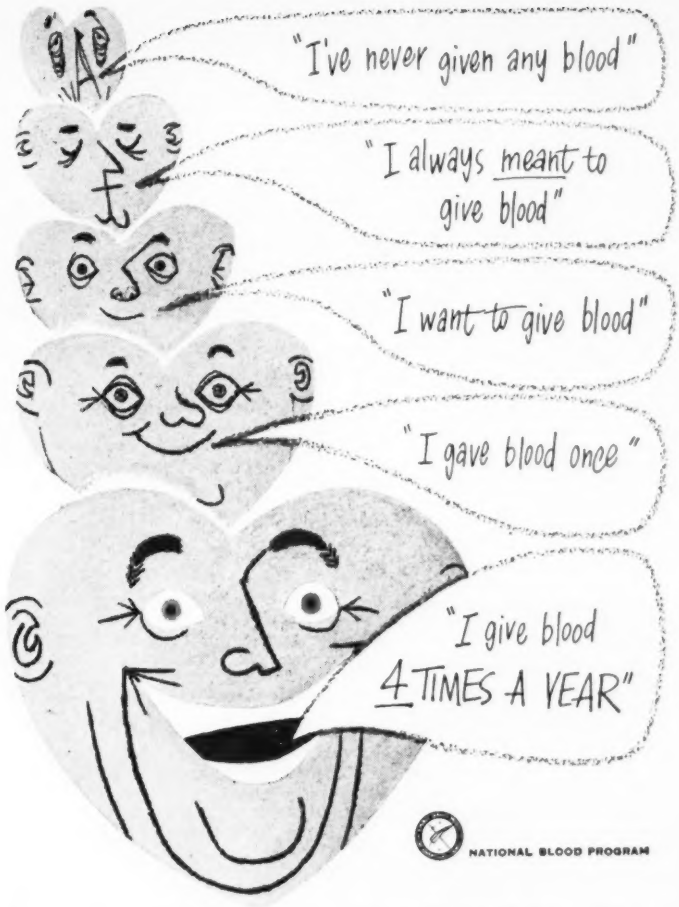
for prompt shipment
in any quantity of

Performance - Proved
Government Specification

FINISHES

Lacquers • Enamels • Dopes • Thinners
Clear Metal Finishes • Colored Lacquers
Clear S.G. for Metal • Texture Enamels
Specialized Production Finishes
Aircraft Finishes

RANDOLPH
PRODUCTS CO.
CARLSTADT, NEW JERSEY


"I've never given any blood"
"I always meant to give blood"
"I want to give blood"
"I gave blood once"
"I give blood 4 TIMES A YEAR"
NATIONAL BLOOD PROGRAM

how big is YOUR *heart?*

Call your Red Cross, Armed Forces or
Community Blood Donor Center

GIVE BLOOD

...give it again and again

Hubert M. Goldman (left), Francis A. Schneiders

Lawrence J. Durney, Jr. (left), Edward F. Foley

ice work during this time has, for the most part, been confined to eastern United States. He is an active member of The New Haven Branch, American Electroplaters' Society, American Chemical Society, and Tau Beta Pi, honorary engineering society.

Lawrence J. Durney joined the Enthone research staff after having worked as plant finishing engineer for Sargent & Company of New Haven for the past six years. Larry has been active in the metal finishing field since his graduation from Manhattan College in 1942 and is well known in the New England area. Prior to his appointment as process engineer with Sargent & Company, he had been employed as chief chemist at Contract Plating Company, Stratford, Connecticut, and at Sulphur Products Company; and as plating foreman and plant chemist for the Propeller Division of Remington Rand Corporation. He is presently vice president of the New Haven Branch, American Electroplaters' Society.

Edward Foley was appointed to the research staff of Enthone, Inc., after having completed one and a half years of service as research assistant to Dr. Henry B. Linford of Columbia University, New York City. He holds a B. S. degree from Columbia and is an active member of the Newark Branch, American Electroplaters' Society and the Metropolitan Section of The Electrochemical Society. While in the employ of Columbia University, Mr. Foley assisted Dr. Linford in his work on electroplating and similar operations.

Allied Research Products, Inc., Baltimore manufacturer of Iridite finishes and ARP plating chemicals, has announced the appointment of two new field representatives for the Allied Research Sales Corporation. **W. O. OSBORNE** has been assigned to Cleveland to handle the northeastern Ohio-western Pennsylvania territory, replacing the Baker Distributing Co. Mr. Osborne's headquarters are

at Suite 403, 1501 Euclid Avenue, Cleveland 15.

EARL H. MESSMORE has been assigned to Indianapolis and will handle the northern Indiana and northwest Ohio territory. Mr. Messmore's headquarters are at 200 Standard Building, Fort Wayne, Indiana.

Both men will handle all Iridite finishes for corrosion protection and paint systems on non-ferrous metals, as well as the line of ARP zinc and cadmium plating brighteners and plating chemicals.

The establishment of St. Louis as a sales office and the opening of a sales sub-office in Houston has been announced by Hercules Powder Company's Synthetics Department.

JOHN S. AUTENRIETH has been named manager of the St. Louis territory.

HENRY D. HEISER has been named resident technical sales representative in Houston. The new office there will be located in the City National Bank Bldg.

The reorganization comes as a result of the growing importance of this area as a market for the products of Hercules' Synthetics Department which include synthetic resins for paints, varnishes, and lacquer; adhesives; and other products.

Elevation of **HERBERT P. BUETOW**, executive vice president in charge of finance, to the presidency of Minnesota Mining & Manufacturing Company has been announced by the board of directors.

He succeeds **RICHARD P. CARLTON** who becomes vice chairman of the executive committee.

Herbert P. Buetow

Mr. Buetow joined 3M as auditor in 1926 and became controller in 1935. He was made treasurer and a director of the company in 1939 and has been an executive vice president since 1949.

ANOTHER SCHORI FIRST! *

IOLYTE LAMINATED FIBERGLAS **TANKS**

***Fabricated* to Your Specifications!**

- **NO MOLDS NEEDED**—Made *any size, any shape,* at no extra cost and no loss of delivery time.
- **UNIFORM DIMENSIONS — NO TAPERING** — Dimensions are same at bottom and top . . . means larger capacities than tapered molded tanks.
- **FLANGES, DAMS, etc.** — Can be inexpensively equipped with flanged connections, holes, overflow dams, baffles, separations, etc.
- **NO REINFORCEMENT PROBLEM** — IOLYTE tanks can be reinforced in any manner — reinforcements for rigidity can be angles or channels of any size and can be horizontally, vertically, or diagonally mounted.
- **OTHER SUPERIOR FEATURES**

IOLYTE Ducts, Hoods, Dampers, Crocks, can be fabricated in any dimensions, any curves, any lengths.

Write for literature, prices, other information.

* OTHER SCHORI FIRSTS: 1. Spraying Metal Powders; 2. Flame Spraying Plastics; 3. Plastisol Rack Coatings; 4. Two solution spray gun; 5. Polyethylene tank lining; 6. Polyethylene-lined barrels; 7. Thiokol coatings.

Distributor Territories Open

SCHORI PROCESS DIVISION OF FERRO-CO CORP.

8-07 43rd Road, L. I. C. 1, N. Y. Factory: 59-31 54th St., Maspeth

Enthone, Inc., New Haven, Connecticut, has announced the appointment of **JOSEPH E. RHOADS**, Cleveland, Ohio, to the position of service engineer covering the territory of western New York and Pennsylvania, the states of Ohio and West Virginia, and northeastern Kentucky. Mr. Rhoads will work in conjunction with the sales engineering staff of R. O. Hull & Company, Cleveland, distributors of Enthone products.

Appointment of **STUART BROWN, JR.**, as divisional manager of the M. B. Suydam Division, Pittsburg Plate Glass Company, has been announced by E. D. Peck, vice president in charge of the firm's Paint and Brush Division.

Prior to his appointment, Mr. Brown was general manager of the Suydam Division. Affiliated with Pittsburgh Plate Glass for the past seven years, he was associated for 19 years in sales capacitites with the M. B. Suydam Company which was acquired by Pittsburgh Plate in 1946.

DANIELS
#4 OLS
in unloading position
PLATE SMALL PARTS
with the DANIELS OLS
For plating die castings, stampings, screw machine parts, castings or any small parts in bulk, this Daniels OLS Oblique Plating Barrel is unsurpassed.
Write for complete details today
DANIELS PLATING BARREL & SUPPLY CO.
Electroplating and Polishing Equipment and Supplies
129 Oliver Street, Newark 5, N. J. • Tel. MArket 3-7450

Mr. Peck also announced the retirement of **RICHARD B. SUYDAM** as director of the M. B. Suydam Division. Mr. Suydam, who has been associated with the paint industry for over 50 years, will continue to serve the company as a consultant.

Frank Passal

FRANK PASSAL, a member of the research staff of United Chromium, Incorporated since 1934, has been promoted to assistant director of research, plating division. Mr. Passal has contributed greatly to the development of many United Chromium products and processes now widely used in the metal finishing industry. Among the better known ones are Unichrome SRHS Chromium, Porous Chromium, and Unichrome Pyrophosphate Copper. He was co-author of the paper "Self-Regulating High-Speed Chromium Plating" presented at the Annual Convention of the American Electroplaters' Society at Boston in June 1950.

Mr. Passal, presently a member of the A.E.S. and an associate member of Sigma Xi, national honorary scientific fraternity, is a holder of the Bachelor of Science degree of the University of Pennsylvania from which he was graduated with honors in 1935.

Metalwash Machinery Corporation, Elizabeth, New Jersey, has announced expansion of sales activities in the Ohio territory with the appointment of **WILLIAM F. ROSS** by the J. E. Von Maur Company of Columbus, Ohio, Metalwash sales representatives in Ohio, Eastern Indiana and Kentucky.

Mr. Ross, former sales engineer, designer, and erection engineer with The Electric Furnace Company has a wide and varied experience in the heat-treating and metal working industries, contributing frequently to the trade press, as well as to Watkins "Encyclopedia of the Steel Industry."

Niagara Alkali Company has announced the appointment of **JAMES E. FERRIS** as director of sales and **M. F. McCOMBS** as manager, Chlor-Alkali sales. Both positions are newly created.

Mr. Ferris, who is past president of the Salesmen's Association of the American Chemical Industry, joined the company in 1926, and has been in sales since 1931. He is on the board of directors of the Compressed Gas Association and the board of governors of the Chemical Specialties Manufacturers' Association.

Mr. McCombs came to the company in 1921, and has been in sales since 1923.

JAMES F. HETZ has been appointed a sales representative in the Ohio territory for the Park Chemical Company, Detroit, manufacturer of heat treating materials. The announcement was made by R. N. Lynch, sales manager of Park's industrial division.

Mr. Hetz will make his headquarters in Cincinnati, Ohio, where he has been connected with the heat treating business for the past ten years.

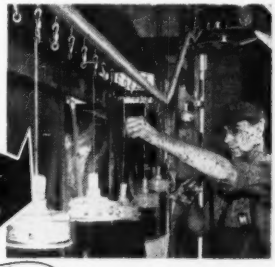
ALBERT E. FORSTER has been elected president and chairman of the executive committee of Hercules Powder Company, Wilmington, Delaware.

He succeeds Charles A. Higgins, who, following company retirement policy, has resigned as president of Hercules, a post he had held since 1939.

Mr. Forster has served as vice president and member of the executive committee since 1951. He was elected a director of the company in 1940.

Mr. Forster joined Hercules in 1925 as a technical service man in the San Francisco office. Leaving the company in 1930 for engineering practice in Brazil, Mr. Forster rejoined Hercules in 1934 as a member of the explosives department and became successively assistant superintendent of the Carthage, Mo., explosives plant, assistant manager of the Birming-

NOW...
for the first time
AT LOW COST...
MORE PROFITS!
with



U.S. PRODUCTS
CONTINUOUS POWERED OVERHEAD CHAIN CONVEYOR
CHAINVEYOR
LIGHT CAPACITY OVERHEAD CONVEYOR
Fully Enclosed, Continuous Powered

FEATURES—

SIMPLICITY—Engineered to eliminate complicated, fast wearing parts, Chainveyor is revolutionary in simplicity of design. **TRACK**—1⅝"x⅛" slotted steel tube easily installed with minimum support. • **CHAIN**—Full ball bearing wheels mounted on steel side links, heat-treated for long life. • **CURVES**—15" radil provides extreme flexibility. • **TAKE-UP**—Adjustable spring take-up automatically maintains uniform chain tension. • **VARI SPEED DRIVE**—Positive sprocket tooth drive with easily replaceable shear pin protection. • **CAPACITY**—30# per pendant at 6" intervals, 60# at 12" intervals when supported by 2 pendants with cross bar attachment.—up to 400# chain pull.

DISTRIBUTORS IN ALL PRINCIPAL CITIES

If your conveyor requirement falls within its capacity—INVESTIGATE CHAINVEYOR. Write today for full information. Dept. D

U.S. PRODUCTS
United States Spring & Bumper Co.
4951 Alcoa, Box 2475 Terminal Annex
Los Angeles 58, California

ham, Ala., sales office, and manager of the service division in Wilmington. In 1940 he became manager of the explosives department.

Later in 1940, the new president was transferred to the naval stores department as assistant manager, and a month later became general manager of that department.

Harold W. Faint

HAROLD W. FAINT has been appointed Chicago District sales manager for the Metal Finishing Division, Frederic B. Stevens, Inc., according to an announcement by Frank Watt, sales manager, Metal Finishing Division.

"He joins Stevens with an invaluable background of experience which we know can help us serve Stevens customers in the Chicago area more fully," stated Mr. Watt, in making the announcement.

Immediately prior to joining Stevens, Mr. Faint was sales manager, Industrial Filter & Pump Mfg. Co., Chicago, a position which he held for seven years.

He also has had 20 additional years experience in allied industries, all related to the field of metal finishing.

Mr. Faint served in both World War I and II with the U. S. Army and is at present a Lt. Colonel in the Reserve.

He is a member of several professional and fraternal organizations and is, at present, serving on the Board of Managers, Chicago Branch, American Electroplaters' Society.

Arthur M. Brewer

Recently announced by R. L. Redmond, vice president of Automotive Rubber Company, Inc., Detroit, was the return of **ARTHUR M. BREWER** to ARco's engineering staff.

Mr. Brewer first joined Automotive Rubber Company, Inc., at the close of World War II. A graduate engineer, he spent the two following years as an ARco sales engineer, working extensively in the electroplating field. He specialized in rubber applications to plating equipment; a phase in which his experience and knowledge was widely recognized.

With the opening of the Korean conflict, Mr. Brewer, being a member of the 127th Fighter Wing of the Michigan Air National Guard, was again recalled to active duty. He saw 27 months of service at the Lake Field Air Force Base near Phoenix, Arizona. There he functioned as a jet pilot-instructor until his second, and most recent, release.

Since resuming his association with the Automotive Rubber Company, Mr. Brewer has devoted his time to developing a variety of fields for ARco protective rubber applications.

Yes: WE'D LIKE TO GET A COPY OF THE BIG NEW M & E SPRAY FINISHING EQUIPMENT GUIDEBOOK

SPRAY BOOTHS - Systems

Name_____

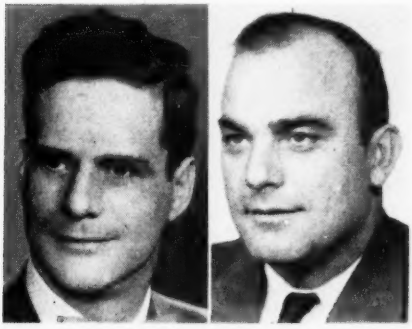
Title_____ Company_____

M&E MANUFACTURING COMPANY
PAINT SPRAY FINISHING SYSTEMS
INDIANAPOLIS 5, INDIANA

Street_____

City_____ State_____

A. E. SMITH and **HARVEY BLIZZARD** have been appointed sales engineers by J. J. Siefen Company, Detroit, manufacturer of liquid buffing and polishing compounds.



Harvey Blizzard (left), A. E. Smith

Mr. Smith will handle the Indiana territory and lives at RR No. 2, Box 10, Elmwood, Indiana. Mr. Blizzard will handle eastern Detroit, Michigan and northwestern sections of Ohio and will locate at the home office, 5657 Lauderdale, Detroit 9, Michigan.

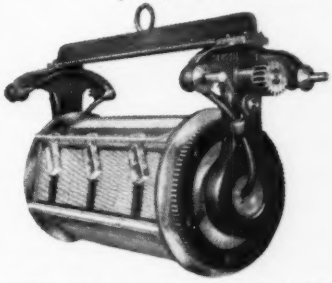
Three appointments in Pittsburgh Plate Glass Company's Industrial Paint Sales Department have been announced. **RICHARD A. BOWES** has been appointed acting manager of industrial sales of the Milwaukee Paint Division. Succeeding him as industrial sales manager at Houston is **WILLIAM B. CALHOUN, JR. CARL PATTERSON** was named to fill Mr. Calhoun's Atlanta position as industrial sales manager.

A native of Sioux City, Iowa, Mr. Bowes had charge of industrial paint sales at Houston for 13 years. A graduate of Northwestern University, he joined Pittsburgh Plate Glass, Paint Sales Division in 1934.

With the company since 1935, Mr. Calhoun was affiliated with paint sales at Houston and Milwaukee prior to heading paint sales at Atlanta. A University of Wisconsin graduate, he is a native of Milwaukee.

Mr. Patterson has been affiliated with the firm since 1952 when he joined the Paint Division's mid-western Industrial

for ★ Production
★ Highest possible current
★ Heavy duty performance



STUTZ PLATING BARREL UNIT

of High Temperature Lucite for continuous operation through Alkali Cleaning, Acid Pickling, Acid and Alkaline Plating solutions and rinsing. Largest number of cylinder perforations possible. Our new patented method of dual hole design provides extra small holes previously unobtainable.

STUTZ PLATING BARREL UNIT

Motor Drive Mounted Overhead

Continuous rotation of cylinder from one operation to another and where a minimum of solution dragout is important. Roller bearing chain drive to absorb load shock.

Write for illustrated literature on our new Portable Plating Barrel.

Manufactured by

GEORGE A. STUTZ MFG. CO.

1639-1647 Carroll Ave., Chicago 12, Ill.

Sales Department. In 1944 he went to St. Louis where he was railway paint sales representative for five years. A native of Milwaukee, he attended the University of Wisconsin.

Born in Long Island City, N. Y., Mr. Clifford was graduated from Brooklyn Polytechnical Institute. He joined Udylite in 1941 and has been serving as sales engineer in the New York area.

Dr. John B. Davidson

Cowles Chemical Company, Cleveland, Ohio, has announced the appointment of **DR. JOHN BARRY DAVIDSON** as director of research. Dr. Davidson joined Cowles in April and will be directly in charge of the research laboratories in Syracuse.

Dr. Davidson took his undergraduate work at Williams College and his graduate work at Massachusetts Institute of Technology, where he received his Doctor's degree. He was a group leader on research projects for Sharples Chemicals, Inc., for a number of years and later was associate director of research for Plaskon Division of Libbey-Owens-Ford Glass Company. A number of patents and patent applications on surface active agents, silicones and paper-treating resins are associated with Dr. Davidson's name.

James L. Clifford

Appointment of **JAMES L. CLIFFORD** as district manager of the Udylite New York sales office has been announced by L. V. Nagle, vice-president and general sales manager of The Udylite Corporation. Mr. Clifford succeeds A. B. Hoefer, who recently became a vice president of Udylite and vice-president, general manager of Frederic B. Stevens, Inc., a wholly-owned subsidiary of Udylite Corporation.

SAM E. GEWIN has been appointed district manager of the St. Louis office of The Bristol Company, Waterbury, Conn., manufacturer of recording and controlling instruments, according to H. E. Beane, vice president of sales.

A 1934 graduate from the University of Alabama with a degree in Chemistry, Metallurgy & Ceramics, Mr. Gewin was associated with the U. S. Industrial Chemical Company for 3 years prior to joining The Bristol Sales organization in 1937 as sales engineer. For the last five years he has been resident sales engineer in the Buffalo area. His new headquarters will be in the St. Louis office, Belt Bldg., St. Louis 2, Mo.

Appointment of **MIRON B. ALLEN** as sales manager of Forbes Finishes Division, Cleveland, has been announced by E. D. Peck, vice president in charge of Pittsburgh Plate Glass Company's Paint and Brush Division.

Prior to his appointment Mr. Allen had been assistant manager, Industrial Sales, Milwaukee, Wisconsin, Paint Division. He succeeds the late Lyman J. Lamb who died in January.

Mr. Allen has been affiliated with Pittsburgh Plate Glass since 1927. For 17 years he served as industrial sales representative in the mid-western states.

TRAINING COURSES

The proper training of spray painting personnel has been one of the pressing problems created for Western industry by the rapid expansion of the West. To help solve this problem, the **BINKS MANUFACTURING COMPANY** of Chicago will hold its first **WEST COAST SPRAY PAINTING SCHOOL** in Los Angeles during the summer of 1953.

Classes will be conducted in a specially prepared room at the Los Angeles plant of the Binks Company. There will be four one-week sessions as follows:

July 6 through July 10, 1953

Los Angeles Plant of Binks Manufacturing Company. Classes for the Binks Spray Painting School —conducted for four successive weeks starting July 6—will be held in this building at 4915 Pacific Blvd., Los Angeles.

July 13 through July 17, 1953
July 27 through July 31, 1953
August 3 through August 7, 1953

The Binks West Coast School is especially suitable for training officials, painters, foremen, industrial distributors and jobbers' representatives, and all those who service spray painting equipment. Classes are composed of men with similar interests and similar problems involving spray finishing and coating.

William Beacham, nationally known spray painting authority, is in charge of the classes. Mr. Beacham's broad background of experience as director of the Binks Research Laboratory will be very helpful to those who have questions about the proper application of specific

PLATING POWER RECTIFIERS
that eliminate costly maintenance!
Sel-Rex
Completely Sealed
SELENIUM RECTIFIERS
NEMA

Air-tight, sealed cabinets stop corrosion.

Cooled by air-to-water heat exchanger. Air recirculated within the cabinet.

Reactronically Controlled — moving parts completely eliminated.

No dust can enter cabinet . . . stack never needs cleaning.

Top efficiency 24 hours a day.

Sel-Rex Rectifiers are Unconditionally Guaranteed for 2 years. Models from 5 to 50,000 amps.

Write Dept. PF7

BART-MESSING CORPORATION
229 Main Street
Belleville 9, N. J.

finishes and coatings. Mr. Beacham will bring to Los Angeles all the visual aids and other equipment that he uses for his classes at the parent plant in Chicago. One of his most recent aids is a sound-slide film explaining the operation of spray painting guns and related equipment.

No tuition is charged. However, classes must be limited to 25 students and each student is expected to pay his transportation to Los Angeles, plus his expenses while in the city. Applications should be made two or four weeks in advance of class dates. All requests for enrollment should be sent to J. E. Roche, Binks Manufacturing Co., 4925 Pacific Blvd., Los Angeles, California.

The schedule for the latter half of 1953 is being announced by the **DeVILBISS COMPANY** for courses of instruction in industrial spray finishing methods of its **SCHOOL OF SPRAY PAINTING**, now in its twenty-seventh year of tuition-free operation for users of DeVilbiss equipment. Applications should be made as early as possible for enrolling foremen, shop superintendents, maintenance supervisors, spray operators and any others who wish to attend the week-long classes beginning on the following dates: July 13; August 17; September 14; October 12; November 9; December 7.

These classes will be held in the modern school headquarters now in operation adjoining the DeVilbiss main plant at Toledo.

Applications for all classes on the new schedule should be sent now to the DeVilbiss Company, Toledo 1, Ohio. Those interested may request School Form INS-753-A. There is no charge for attending, the only expenses being transportation, board and lodging.

SOCIETIES

B. F. Ames, general sales manager of **MAAS & WALDSTEIN CO.**, Newark,

Front row left to right: Dr. A. A. Janis, American Optical Co., Buffalo, N. Y.; B. F. Ames, Maas & Waldstein Co., Newark, N. J.; W. Marks, Universal Finishing Co., Leaside, Ontario; A. Uigro, Sterling Silver Plating Co., Buffalo, N. Y.; John Acheson, Toronto, Ontario; B. Fortin, Oakite Products, New York, N. Y. Back row left to right: W. C. Treadwell, Maas & Waldstein Co., Newark, N. J.; D. H. Hanna, Hanson-Van Winkle-Munning Co., Toronto, Ontario; H. V. Bunting, Modern Plating Co., Toronto, Ontario; A. Coxhead, Sunbeam Corp., Toronto, Ontario; B. J. Cameron, American Electro Plating Co., Toronto, Ontario; L. Novack, Star Plating Co., Buffalo, N. Y.; R. Edwards, Daven Court Electroplating, Toronto, Ontario; D. Walker, Rapid Plating Works, Toronto, Ontario; G. C. McDonald, Oakite Products of Canada, Toronto, Ontario; E. P. Blandy, Canadian Arsenals Ltd., Toronto, Ontario; A. Severs, Armalite Co., Ltd., Toronto, Ontario.

N. J., recently addressed a joint meeting of the Buffalo, New York-Toronto, Ontario, Canada Branches of the American Electroplaters' Society.

The topic of Mr. Ames' address was "New Developments in the field of Organic Coatings" which embraced the complete variety of materials that are currently being manufactured in the United States. He discussed the advantages and disadvantages, as well as applications and use of a variety of synthetic type coatings including alkyd, melamine, phenolic and the various modifications of each, including styrenated coatings and the new epon resin coatings. Chlorinated rubber finishes and vinyls were also discussed.

THE DEVILBISS COMPANY was host at its main plant for the May meeting of the **TOLEDO PAINT, VARNISH AND LACQUER ASSOCIATION** and the Toledo Chapter of the **PAINTING AND DECORATING CONTRACTORS OF AMERICA.**

The guest of honor was Richard H. Bohl, of Columbus, the national president of the Painting and Decorating Contractors of America. In his brief remarks following dinner he congratulated members of the audience as representatives of two highly important segments of the paint industry working together in harmony. Through their cooperative efforts, he said, these two divisions of the industry do a multi-million-dollar annual business. They keep the country's factory buildings, homes and public institutions painted, protected and attractive to the eye.

At the conclusion of the dinner pro-

PAINT MIXER

MIRACLE
5 GALLON
PAINT REJUVENATOR
All paint restored to original consistency without opening the can.
2 minutes per gallon.
MIRACLE PAINT REJUVENATOR CO.
127 E. 9th St., St. Paul 1, Minn.

NOW an expanded metal NESTIER Basket for all dipping, degreasing + plating operations

IT NESTS
IT TIERS
– is interchangeable with the standard NesTier shop box – and performs many extra functions.

The NesTier Basket, built to standard NesTier dimensions, can be transported by roller and overhead conveyors, on pallets and skids – can be carried easily by hand.

This important NesTier unit simplifies finishing operations – eliminates need for changing containers when dipping, cleaning or degreasing. Available in two standard sizes. Heavy-gauge steel, zinc plated.

PRODUCTS FINISHING ENGINEERS – WRITE FOR FREE DESCRIPTIVE BULLETIN TODAY

Our service includes complete engineering advice to systematize small parts handling in your plant.

NESTIER®
IT NESTS – IT TIERS
The Chas. Wm. Doepke Manufacturing Co., Inc.
Rossmoyne, Ohio — Metal Specialties Division

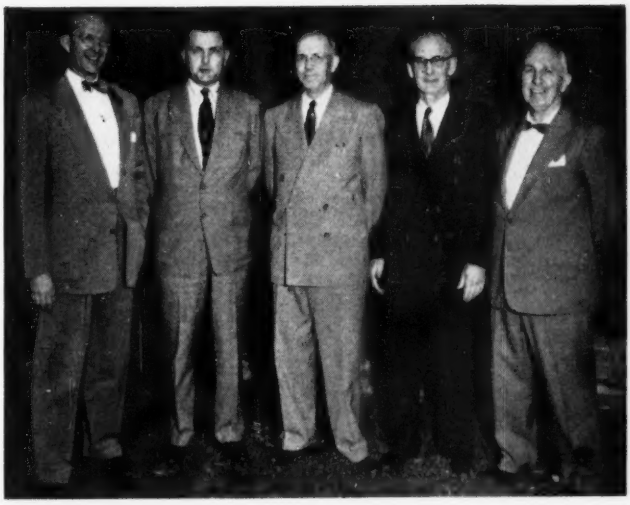
At a recent meeting of the HARTFORD BRANCH, A. E. S., Arthur W. Logozzo, a past president of the Society, installed Mrs. Julia Madzik as president of the Branch. Mrs. Madzik has the distinction of being the only lady president of an A. E. S. Branch. She is chief chemist at the Connecticut Telephone and Electric Co., Meriden, Conn.

(PRODUCTS FINISHING Staff Photos)

gram, the group adjourned to the DeVilbiss customer service building for a presentation on recent developments in spray application of protective coatings by John F. McCaslin, head of customer research, and George I. Stoddard, chief instructor in the DeVilbiss school of spray finishing technique.

Toastmaster for the meeting was Frank R. Pitt, president of the Toledo P. V. & L. Association and secretary of the DeVilbiss firm, and among the company executives present were Howard P. DeVilbiss, president; Henry M. Kidd, vice pres-

(Below) In this photo, made at a recent Hartford Branch, A. E. S., meeting, can be seen George B. Hogaboom (left foreground), first president of the American Electroplaters' Society.



(Left to right) F. R. Pitt, president of the Toledo Paint, Varnish and Lacquer Assn., and secretary of the DeVilbiss Company; H. P. DeVilbiss, president of the DeVilbiss Company; R. H. Bohl, national president of the Painting & Decorating Contractors of America; C. A. Long, president of the Toledo Chapter of P. D. C. A.; H. F. Mollenauer, past president of the Columbus chapter of P. D. C. A.

ident; and Emil F. Frey, director of advertising and sales promotion.

HONORS

A. DONALD KELSO, president of Norton Behr-Manning Overseas Inc., and vice president of Norton Company, both of Worcester, Massachusetts, has been made a Chevalier of the Legion of Honor.

Mr. Kelso was decorated by Francois Charles-Roux, French Consul-General for New England at ceremonies in observance of Lafayette Day.

The honor was bestowed in recognition of services to the French cause in the six-state New England area and for aid given the people of France by Mr. Kelso.

The corporation which Mr. Kelso heads handles all export business, directs foreign plant operations of Norton Company and its subsidiary, Behr-Manning Corporation of Troy, New York. Norton Behr-Manning Overseas Inc. operates two plants in France: one for grinding wheels and one for sandpaper.

Doesn't YOUR product deserve a MOCO surface?

MOCO BUFFING COMPOUNDS

The "Long Mileage" line for all finishing requirements

MOCO TUMBLING BARREL COMPOUNDS

To keep pace with modern barrel finishing techniques

WE INVITE YOUR INQUIRIES

THE MOSHER COMPANY · 15 Exchange St., Chicopee, Mass.

Carl F. Mayer

CARL F. MAYER was one of four engineer-executives to receive the annual Trinks Award for outstanding achievement in the industrial heating industry at a banquet at the Duquesne Club in Pittsburgh.

Similarly honored with Mr. Mayer, who is president of The Carl Mayer Corp., Cleveland, Ohio, were **H. H. HARRIS**, president of General Alloys Co., Boston, Mass.; **CARL I. HAYES**, president of C. I. Hayes, Inc., Providence, R. I.; and **J. SPOTTS McDOWELL**, technical assistant to the president, Harbison-Walker Refractories Co., Pittsburgh, Pa.

The award is bestowed by a judges' panel, among candidates nominated by the industry, for the most notable contributions to economic or scientific progress in industrial heating. It was established in honor of Dr. Willibald Trinks, professor emeritus of Carnegie Tech and world authority on industrial heating problems.

Mr. Mayer was selected by the Award Committee for his design and engineering advancements in the industrial oven field. He is well known in the industry for his early development of steel insulated panel type ovens, particularly in core and mold oven practice.

He was also cited for his pioneering development in industrial ovens, air heaters, furnaces and allied equipment for which he holds some 17 patents. More than thirty technical papers and articles have won him recognition as an international authority on industrial ovens.

A native of Cleveland, Ohio, Mr. Mayer was educated there and at the University of Michigan where he received the B.S. Degree in Engineering in 1918.

He is on the board of The Swartwout Co., and the Advisory Board, Smaller Business of America. He also served on the Industrial Advisory Board, War Production Board, and was a board member of the Industrial Furnace Manufacturers Assn. He is a member of the Ohio Chamber of Commerce, the Wire Association, the National Association of Manufacturers, and the American Society for Metals.

Dr. Adolf C. Elm

Dr. Adolf C. Elm, of The New Jersey Zinc Co., has been selected to present the fifth Joseph J. Mattiello Lecture at the 1953 **ANNUAL MEETING** of the **FEDERATION OF PAINT AND VARNISH PRODUCTION CLUBS**, to be held at Chalfonte-Haddon Hall, Atlantic City, N. J., October 29, 30, and 31, 1953.

The Mattiello Lecture was instituted by the Federation in 1948 to honor the late Dr. Joseph J. Mattiello, an outstanding scientist and author in the field of decorative and protective coatings.

Dr. Elm received his Ph.D from the University of Marburg in Germany in 1923. In 1924 he became associated with the laboratory of the Finishes Division of E. I. duPont de Nemours & Co., Inc., and later joined the laboratories of the American Asphalt Paint Co., and McCloskey Varnish Co. Since 1929 he has been a member of the staff of the Research Department of The New Jersey Zinc Co. and is now research supervisor.

NECROLOGY

Dr. Pierre I. Chandeysson

It was with infinite regret that the employees and associates of the Chandeysson Electric Company, St. Louis, Missouri, learned of the death of its founder and president, **DR. PIERRE I. CHANDEYSSON**, on June 5, 1953. Active in the management of the company until a year ago, death came in a St. Louis hospital following a coronary thrombosis.

Born in France, Dr. Chandeysson came to America at the age of seventeen. Eight

years later, in 1901, he graduated from Washington University, College of Medicine, and joined the staff of the St. Louis City Hospital, specializing n pediatrics. Here his searching mind and boundless energy soon earned an esteemed reputation. But, it was in another field of science in which his genius was to find its highest expression. This came about as a result of hs keen interest in electricity and mechanics.

While studying at the University and in the years that followed, Dr. Chandeysson pioneered the design and development of low voltage, high current generators for electroplating use.

Electrical equipment at the turn of the century left much to be desired and the tremendous demands of American industry presented a challenge which Dr. Chandeysson could not resist. He formed the Chandeysson Electric Company, gave up his medical practice, and set about to the challenge of electrifying American industry. He seized every opportunity to apply his genius, making significant developments in telegraphy, ticker mechanisms, railroad signals, medical magnets and homopolar generators used in railroad test cars for rapid rail defect inspection, to mention only a few.

As industry expanded, the demand for electroplating generators reached the point where the entire production of Chandeysson Electric was channeled into this activity. It is, therefore, the Electroplating and Finishing Industry which knew Dr. Chandeysson best, and it is the industry which will long remember his contributions.

In anticipation of his retirement, Dr. Chandeysson transferred his ownership of Chandeysson Electric Company to a family trust 12 years ago, under which it has since operated.

R. LESLIE BEATTIE, vice president and general manager of Canadian operations of The International Nickel Company of Canada, Ltd., died suddenly June 10 at the age of 62.

Mr. Beattie joined the Canadian Copper Company, a predecessor of International Nickel, in 1911. Under his direction, International Nickel's war-time expansion program in World War II was started and achieved in record time, assuring the United Nations vital supplies of nickel. Since early in World War II he directed the planning and research associated with the company's underground mining expansion program.

AGATEEN

For Gold, Brass, Bronze, etc.

We recommend

Agateen Baking Lacquer #30X

Lots of mileage. Alcohol, flame and water resistant.

Minimum orders accepted. No samples.

Agate Lacquer Mfg. Co., Inc.

Serving industry since 1927

11-13 43rd Road

Long Island City, N. Y.

Stillwell 4-0660-1

AGATEEN

THE LAST WORD IN QUALITY

Sept 14-15. Semi-Annual Meeting, American Hot Dip Galvanizers Association, Inc., Hotel Statler, Cleveland, Ohio.

Sept. 16-18. 15th Annual Shop Practice Forum, Porcelain Enamel Institute, Ohio State Univ. and Deshler-Wallick Hotel, Columbus, Ohio.

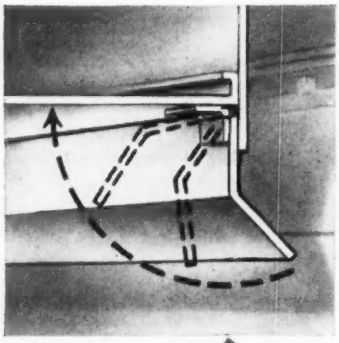
Sept. 21-25. Eighth National Instrument Exhibit, Instrument Society of America, Sherman Hotel, Chicago, Illinois.

Sept. 23-25. 56th Annual Convention of the International Association of Electrotypers & Stereotypers, Hotel Statler, Detroit, Mich.

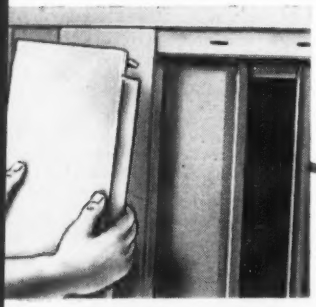
Oct. 29-31. 31st Annual Meeting of the Federation of Paint and Varnish Production Clubs, Chalfonte-Haddon Hall, Atlantic City, N. J.

NEW SPRAY

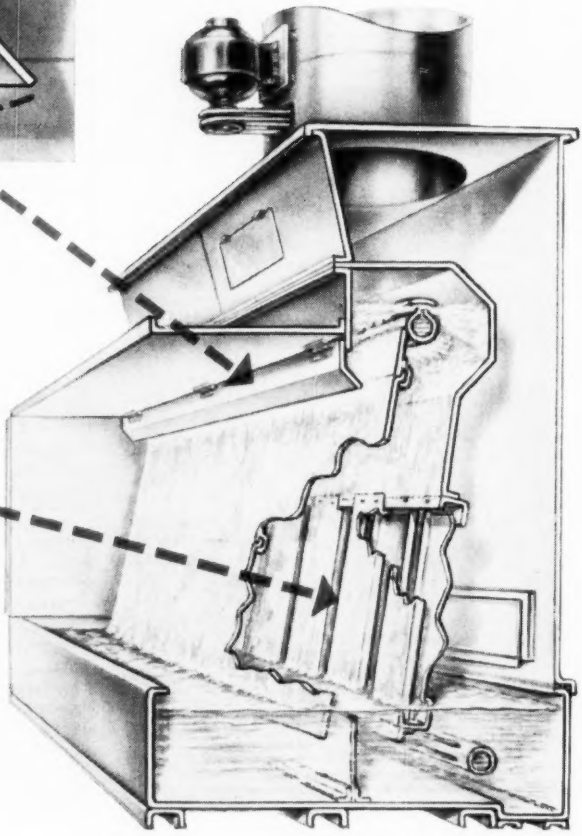
lowers



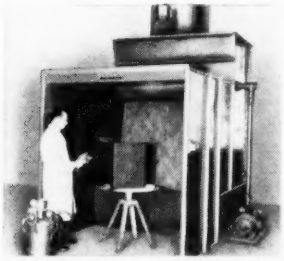
Hinged deflector plate (left) provides easy access to section where most pigment is removed from exhaust air.



Easily-removed baffles (above) speed inspection, simplify occasional cleaning of this final pigment-removal section.



BOOTH maintenance costs

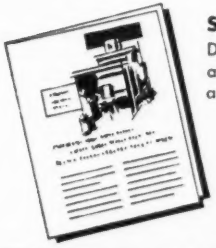


The enemy of economy in most spray booth installations is time-consuming cleaning. But now, with these time-saving features of Binks new DUC Water-Wash Spray Booth, you'll at last find the cleaning ease you've hoped for:

Binks DUC Water-Wash cuts cleaning time because it prevents build-up of pigment on booth surfaces. Through sudden changes in direction of air flow, centrifugal force flings pigment out of the air. Water flushes virtually all pigment into the pan at the base of the booth for easy removal.

Binks DUC Water-Wash cuts cleaning time by eliminating difficult maintenance procedures. As the illustrations show, the deflector plate swings back and the baffle plates come out without tools to provide swift accessibility to the major sections of the booth.

You'll save money other ways, too. The DUC saves floor space, uses the same water over and over again. And Binks guarantees that every DUC installation exceeds the requirements of fire, health and state authorities.



Send for your FREE copy of Bulletin DUC...

Describes the 7 major advantages this booth provides to save you time and money. Facts backing each claim thoroughly explained with pictures and sketches. See your Binks industrial distributor or send in coupon.

Binks

EVERYTHING FOR SPRAY PAINTING

MAIL COUPON for Bulletin DUC—it's FREE!

Binks Manufacturing Company
3118-40 Carroll Ave., Chicago 12, Ill.

Gentlemen: Please rush my FREE copy of your Bulletin DUC describing your new Dynaprecipitor Water-Wash Spray Booth.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES · SEE YOUR CLASSIFIED PHONE DIRECTORY

New • EQUIPMENT • MATERIALS • PROCESSES

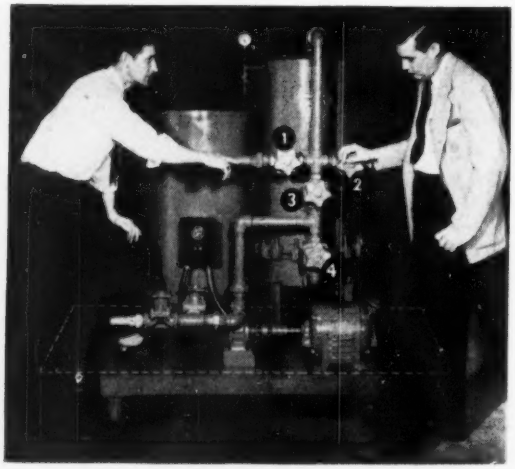
Solution Filter

Titeflex, Inc., 531 Frelinghuysen Avenue, Newark 5, New Jersey, has announced that Titeflex filters have been redesigned to reduce the amount of floor space required. The filter illustrated, Model IA-18-20, is four feet long by three feet wide, as compared to five feet ten inches by two feet nine inches for the model which it replaces.

Improvements have been made in the location of control valves and of motor and pump, according to the manufacturer. As shown in the photograph, the control valves have been grouped in front of the filter at a height which makes them readily accessible to any workman and requires less floor space in operation. Motor and pump are placed in front of the precoat tank and the filter chamber, simplifying any maintenance required, such as packing pump.

The essential components of Titeflex all-purpose filters are: (1) filter chamber, (2) precoat tank, (3) motor, and (4) pump. Filtration is accomplished in three cycles. In the precoating cycle, filter-aid is mixed with clear liquid in the precoat tank, and the mixture is pumped into the filter chamber where filter-aid deposits on outside of two-inch diameter porous tubular membranes suspended vertically in filter chamber. Clear liquid is returned to precoat tank. Precoating requires only a few minutes and is complete when liquid in precoat tank is devoid of filter-aid. In the filtering operation, unfiltered solution is pumped into filter chamber where sediment is deposited on a layer of filter-aid and clear filtrate is discharged from outlet.

The final operation—cleaning—is accomplished easily and simply by back-



Redesigned Titeflex filter showing savings in floor space and convenient location of valves, motors and pumps. Dotted lines show space required by former filter of same capacity (3000 g.p.h.). Control valves numbered are: (1) recirculation valve, (2) inlet valve, (3) backwash valve, (4) inlet valve.

washing or reversing flow of liquid through the membranes. Flow of water under pressure from inside of membrane knocks cake of filter-aid and sediment from outside surface of membrane. Cleaning of average filter can be accomplished in a few minutes, with no dismantling of equipment required.

Operation of Titeflex filters is carried out by turning a few valves, greatly reducing man hours required to operate filtration equipment.

Standard models are available with capacity on water from 300 to 10,000 gph., and specially-designed larger filters can be built to customer's requirements.

DeBurgh Magnetic Conveyor

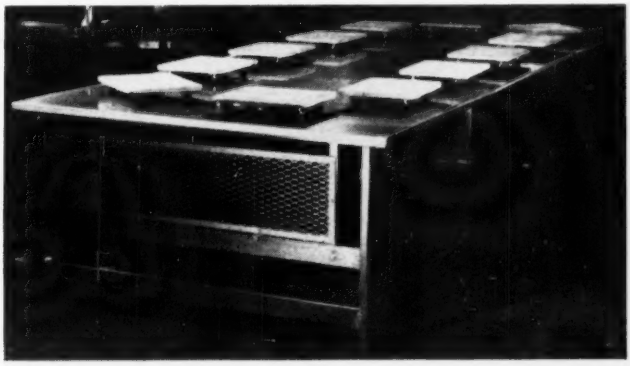
An entirely new concept in conveyorization, designed for parts assembly, sorting, warehousing, packing, and so on, was introduced at the Materials Handling Exposition at Philadelphia, on May 18-22 by George Koch Sons, Inc., Evansville, Ind.

It is the patented DeBurgh Magnetic Conveyor which is said to offer the ultimate in employee safety, unsurpassed cleanliness, better service utilization and flexibility to any layout.

The DeBurgh Magnetic Conveyor is manufactured under patents of the late A. R. DeBurgh, inventor of the Palletized Conveyor for furniture finishing and industrial use.

The Magnetic Conveyor provides a remotely located prime mover which carries parts from station to station by an invisible magnetic lock over an unbroken stainless steel work surface. Loads can be simply attached and detached from the line.

Practically any pattern of curves can be traversed and almost any ware size or load can be handled. Location of the permanent magnet conveyor wire can be made at any elevation from the floor.



DeBurgh Magnetic Conveyor

Paint Strippers

Oakite Products, Inc., manufacturer of industrial cleaning and allied materials, has announced the development of two new paint strippers, Oakite Composition No. 56 and Oakite Composition No. 57, designed respectively for tank immersion stripping and brush-on stripping of a wide variety of alkaline-resistant paints and lacquers.

Oakite Composition No. 56, the manufacturer reports, is a thin-bodied solvent, neutral in character, having a pH of 7. It is non-flammable, and contains no phenols, cresols, acids or alkalies. Designed for immersion stripping of urea-formaldehyde, alkyd, phenolic and urea-melamine finishes, lacquers, varnishes, wrinkle finishes and vinylite resins, material is used at full strength and unheated, with parts to be stripped immersed for periods of time which will vary depending on the type of paint, number of coats, age, and so on. Some finishes will wrinkle and rinse off in sheets with a pressure rinse after application of Oakite Composition No. 56, others will soften to the point where they can be scraped or brushed off. Used as recommended, Oakite Composition No. 56 is said to be safe on steel, brass, copper, zinc, magnesium and aluminum.

The second of these materials, Oakite No. 57, is a viscous solvent intended to replace combinations of non-viscous solvent detergents and thickeners when stripping finishes from vertical and inverted surfaces of equipment. It is non-flammable and, like Oakite Composition No. 56, contains no phenols, cresols, acids or alkalies. It can be applied on all metals at full strength by brush-on method, and is allowed to soak on surfaces

until paint wrinkles or softens. Paint is then hosed or scraped off. Many phenolics, alkyds, ureas, vinyls, varnishes and lacquers are readily removed by one application of this material, the manufacturer reports, while some finishes may require more than one application. When work stripped with either Oakite Composition. No. 56 or Oakite Composition No. 57 is to be repainted, the manufacturer recommends thorough rinsing to remove all stripping material, since any solvent stripper film remaining on surfaces will prevent proper adherence of new paint coat applications.

A special Service Report providing additional information regarding these materials and giving helpful recommendations for obtaining maximum benefits with their use is available, without cost, to readers writing on company letterhead to Oakite Products, Inc., 120 Rector St., New York 6, N. Y.

Semi-Automatic Plating Unit

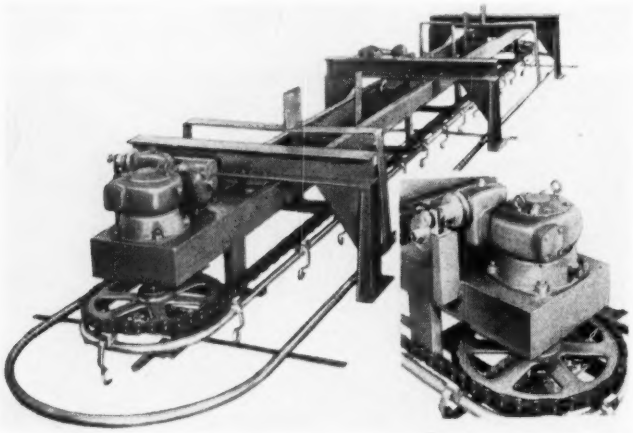
Wagner Brothers, Inc., 432 Midland, Detroit 3, Mich., has designed a new "packaged" semi-automatic plating system to replace or augment still tank plating for the electroplating field.

The manufacturer points out that a great advantage of the Wagner semi-automatic is its versatility. When a run is completed (or between runs of a certain part), the system may be altered for a different job by simply shifting the "pusher shoes" to the desired spacing. Spacing to any dimension in 2-inch increments may be accomplished in a minimum of time by removing pusher shoes. The second advantage of the Wagner semi-automatic is in the reduction of maintenance costs; all wear points are Zerk lubricated, the standard roller chain is available everywhere, and the Micarta pusher shoes last indefinitely. The variable speed control and drive are combined in one unit which may be replaced in minutes by removing a few hold-down bolts. Standard v-belts are used for drive and agitating mechanisms. The plating shop hazards of drip, moisture and corrosion are eliminated by the totally enclosed ball-bearing motor. For long life, the driving sprocket shaft turns on three bearings, two in the speed reducer, one outboard in the frame.

Efficient agitation is obtained by longitudinal motion; the mechanism is mounted at one end on a single bracket with v-belt drive. An unusual feature of the Wagner "semi" is the clean design which permits loading at any point, even at the ends of the tank. The anode bar is formed equidistant from the cathode at ends as well as sides so that plating is uninterrupted and quality is uniform. The packaged semi-automatic includes tank to standard or user's specifications, is completely insulated at critical points and wired ready for installation.

Kanigen

Kanigen, a nickel plating process which requires no electricity has been announced by General American Transportation Corp., 135 South LaSalle St., Chicago 90, Ill. The manufacturer states that deposits from the Kanigen process show a uniform coating thickness regardless of the shape of the article to be coated. Deposits show very little porosity except in the event that the basis metal is pitted or defective.



Semi-Automatic Plating Unit

The supplier of the Kanigen process points out that the deposit is almost pure nickel and since it is non-porous, its corrosion resistance approaches that of wrought nickel.

Claimed for the process also is a substantial saving in the amount of nickel required and the elimination of such equipment as insulated racks and hangers.

The adhesion of Kanigen to steel and other metals as well as plastics and glass is said to be excellent. Kanigen plate is described as being a nickel-nickel-phosphide composition. The plate contains from 5 to 8 per cent phosphorus and has a Vickers hardness of 550 to 650.

Suggested applications for the process include its use in instrument gearing and precision manufacturing. It has been used to plate steel, brass, bronze, Monel and stainless steel to protect intricate parts from abrasion as well as corrosion. Further, in the chemical industry it can be used to plate vats, mixing units and connecting devices, such as valves, pipes, pumps and so on.

Abbott Tumbling Barrel

An improved barrel finishing unit designed to efficiently handle burnishing, deburring and cutting-down operations has been announced by The Abbott Ball Company, Railroad Place, Hartford, Conn. Other outstanding features listed by the manufacturer include precision speed controls, interchangeable parts and low operating costs.

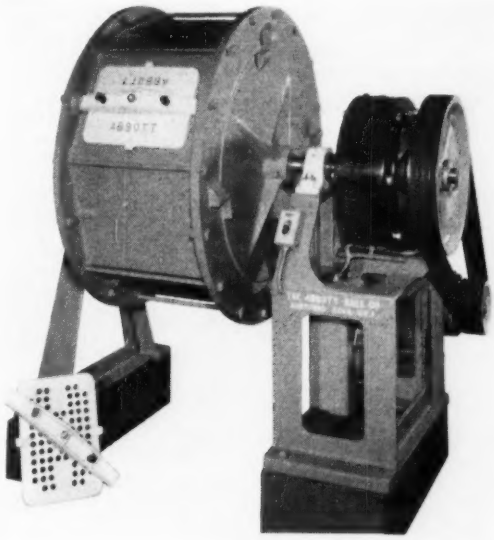
Built around the high, vertical barrel first developed and marketed by Abbott, the unit is compact and efficiently designed. Power is supplied by an electric motor mounted on the barrel pedestal. A standard motor base is provided to accommodate several sizes and makes of motor. Precision speed control is maintained by an American reduction drive attached directly to the barrel shaft. Linkage between the motor and the reduction unit is provided by "V" belts and sheaves. Speed of the barrel is tailored to fit the user's requirements through a combination of sheaves. The unit is controlled with a conveniently located push-button safety switch which can also be used to "jog" the barrel to any desired position.

According to the manufacturer, the unit's improved design and the use of a highly efficient drive mechanism makes it possible to operate the barrel with a comparatively small motor. The reduction drive unit and "V" belts provide a low torque drive which produces a minimum shock and starting load on the motor. Normal operating speeds are reached almost instantly.

By providing interchangeable parts for the new barrel, Abbott spokesmen claim a substantial savings in operating costs can be realized since it is not necessary to replace the entire barrel but only that part which is worn out.

An important feature of the new barrel is the use of color dynamics in the painting of this equipment. Lubrication points are appropriately marked in bright colors for instant identification.

Four standard sizes are available in ten basic combinations with single, double and triple compartments to fit the user's requirements. Standard barrel I. D. sizes for single barrels equipped with



Abbott Tumbling Barrel

maple linings are 24 by 8 inches, 24 by 16 inches, 30 by 8 inches, and 30 by 16 inches. Barrels used for deburring or cutting-down operations do not have the 3 inch hard rock maple linings.

DeVilbiss HAA Air Regulator

An air regulator, capable of handling a large volume of compressed air with a minimum pressure drop, has been marketed by the DeVilbiss Company, Toledo, Ohio.

Available for immediate delivery, type HAA regulator has a capacity of 80 c.f.m. at 100 pounds line pressure. It is manufactured in two models, each basically the same with the exception of inlet and outlet connection arrangements.

DeVilbiss engineers are reported to have achieved more sensitive control and reduced pressure losses by using air pressure against the regulating diaphragm, which provides power regulation. This feature is claimed to make adjustment of the control knob easier when regulating air pressure. Air flow increases as demand increases without affecting the pressure which has been set, according to the manufacturer.

The maximum pressure which can be regulated is 135 p.s.i. and it is stated that DeVilbiss engineers have set the maximum line pressure at 300 p.s.i. For trouble free service, they recommend a strainer or filter be installed in the air supply line.

DeVilbiss HAA Air Regulator

The unit is about three inches wide and four and one-half inches high. All exposed metal surfaces are plated.

Continuous Feed Abrasive File

A new "abrasive file"—used like a conventional metal file, but with a cutting surface that feeds from a coated abrasive roll—has been announced by Monarch Machine Shop, Inc., Madison, Wis., and Minnesota Mining and Manufacturing Co., St. Paul, Minn.

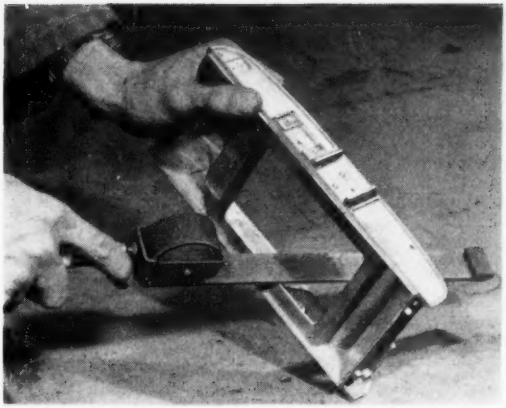
Called the "Red Flash" abrasive file, the new hand tool is designed for deburring and other filing and finishing operations throughout the metal-working field. It is manufactured by the Monarch Company.

Featuring an 11-inch stroke, the file holds a roll of more than six feet of abrasive cloth, providing a six-foot cutting surface that is dispensed as needed to provide a fresh surface and to maintain peak cutting efficiency at all times.

Other advantages of the new tool are

McKeon's
"Liquid Sulphur"
FOR COPPER STRIPPING NON-DANGEROUSLY
Economical, Non-Electrolytic.
No special equipment required.
Write for descriptive brochure.
Sulphur Products Co., Inc.
GREENSBURG 8, PA.

Send NOW for this FIT-ALL
DRUM PLUG WRENCH
Instantly loosens, tightens 95% all plugs or bungs in steel drums. Has 16" extra-strong steel tubing handle. Wgt. only 2 lbs. Order 1 or more today!
It's MORSE
THOUSANDS IN USE saving time, labor, accidents!
SATISFACTION GUARANTEED.... $3.00
Non-sparking type $4.60
Plus Parcel Post
MORSE MFG. CO., Inc.
762 W. Manlius St., E. Syracuse, N. Y.



Continuous Feed Abrasive File

faster cutting, increased versatility through a wide choice of abrasive grits, and greater economy, since only the cutting surface—rather than the entire file — is replaced when it becomes dull.

It is designed for use in all shops, such as machine, tool and die, sheet metal, and autobody shops, as well as by pattern makers and general purpose users.

The file comes in a 1-inch width and in a 1½-inch width complete with a "Three-M-Ite" grit 80 abrasive cloth roll. "Three-M-Ite" abrasive cloth utility rolls in 50-yard lengths are available for refill purposes in grit sizes ranging from grit 24 to 320.

Rinkeloid Finishes

Wrinkle finishes in pale shades and pastel colors are claimed to be more practical than ever before with the Rinkeloid wrinkle finishes announced by Standard-Toch Chemicals, Inc., 2690 Richmond Terrace, Staten Island 3, N. Y. Base of the finishes is a new resin, synthesized by the Standard-Toch's research laboratory, which eliminates or minimizes color instability.

Because of improved color stability and pattern control during baking, normal variations in oven temperature will not result in variation in Rinkeloid Color. Blacks, grays, and browns will tolerate as much as 25-degree differences in oven temperature without widely varying color tones. Blacks, it is stated, will not develop the undesirable brownish appearance which reduces their attractiveness.

According to the manufacturer, pastel colors such as pale cream, blue, green, ivory, and pink may be produced.

The ease with which these finishes may be controlled is expected to broaden the use of pale colors on office equipment, appliances, photographic equipment, and similar products.

Variable Speed Wide Swing Polishing and Buffing Lathe

Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich., has announced the development of a 10 h.p. wide swing variable speed polishing and buffing lathe.

Designated as Model 10 VROW, the lathe has an extended spindle, affording maximum working area around the wheels and has a variable spindle speed range of 1500 to 3000 r.p.m. The speed may be changed as desired while the machine is running.

Model 10 VROW 10 h.p. Variable Speed Polishing and Buffing Lathe.

"Minit-Kote" Phosphate Cleaner

Klem Chemicals, Inc., 14401 Lanson Avenue, Dearborn, Michigan, has announced an improved one-stage phosphate cleaner for more economical preparation of all types of metal surfaces for painting. The manufacturer states that Minit-Kote, as the cleaner is known, removes in as little as 60 seconds, at a concentration of only ¼ to 2 per cent by volume, all traces of oil, dirt, rust and tarnish. At the same time it deposits a light, uniform phosphate coating on the surface that assures better paint adhesion.

The new Minit-Kote is especially designed for use in spray-type washers at temperatures of 160 to 180 deg. F. No special handling equipment is required in using Minit-Kote, and it is non-toxic.

Minit-Kote may also be used, instead of an alkali rinse, in spray gun or steam cleaning equipment at even lower concentrations, making these operations more economical. Since it does not precipitate hard water salts, it may be diluted with any type water.

No. 966 Electric Sander-Polisher

The Syntron Co., 452 Lexington Ave., Homer City, Pa., has made available an electric sander-polisher which, with available attachments and accessories, can be used for sanding, polishing, buffing, drilling and light bench grinding, and wire brush work.

The No. 966 Electric Sander-Polisher is furnished complete with lambs wool bonnet and sanding discs. Its universal motor will operate from a.c. or d.c., 115 volts.

Attachments, such as the ¼ inch capacity keyed Jacobs Chuck, the orbital-motion fine sander and the bench stand and wheel arbor, are available, as well as a complete line of accessories: wire brush, cup wire brush, buffing wheel, additional sanding discs and lambs wool bonnets.

No. 966 Electric Sander-Polisher

Seamless Fiberglas Plating Tank

Hanson-Van Winkle-Munning Co., Matawan, N. J., has offered a seamless Fiberglas tank for use with all solutions generally used in the plating field with the exception of caustic cleaner and hydrofluoric acid. Fiberglas tanks are less expensive than lined steel tanks and are equally impervious to chemical attack.

Temperatures of tank contents may be as high as 220 deg. F. Tanks can be furnished in any size required. Fiberglas

SOLVENTS and THINNERS RECOVERED

from wash thinners, spoiled lacquers, degreasing machine sludge, etc.

Solvents recovered by the Lofgren Process.

Each customer's shipment, whether one drum or a carload, receives proper and separate treatment. Write to:

Solvents Recovery Service, Inc.
101 Central Ave. Westfield, N. J.

Hammond Solvents Recovery Service
241 Brunswick St. Hammond, Ind.

MASKING TAPE

DIE-CUT TO YOUR EXACT SPECIFICATIONS FROM

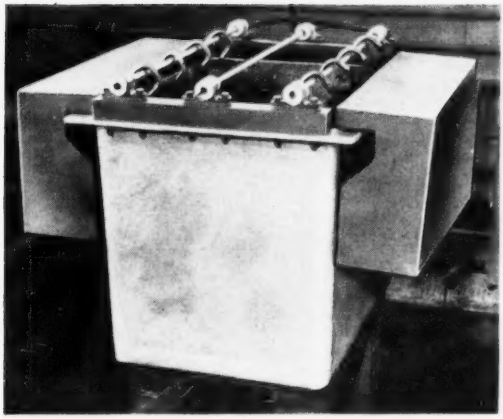
SCOTCH BRAND

INDIVIDUAL PIECES • ANY SIZE OR SHAPE

For quick, accurate masking operations.

PHONE OR WRITE **PANOCO**

505 Carroll St., Brooklyn 15, N. Y.



Seamless Fiberglas Plating Tank

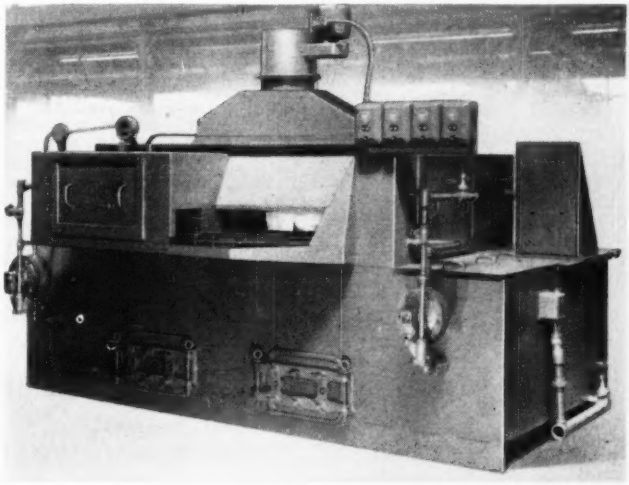
mat is impregnated with Vibrin resin and actually custom molded to the exact size desired by the customer. The standard finish is gray.

This Blakeslee unit is available in a wide variety of sizes, and the turntable is designed to accommodate all types of work, in various stages of manufacture. Special motor-driven pumps circulate the washing and rinsing solutions. The air, connected to the regular shop line, is controlled by an automatic trip mechanism so that air is "on" only as the work passes through the blow-off section. Correct operating temperature is maintained at all times by a Bellows operated thermostatic control valve in the heating line.

The equipment described above can be furnished for steam use or gas heat, and in special explosion-proof construction for use with petroleum solvents.

Turntable Washing Machine

A newly designed washing machine, offered by G. S. Blakeslee & Co., 1844 S. 52nd Ave., Chicago 50, Ill., incorporates several interesting features resulting in economy of space and economy in operation. Machine work either in baskets or in special fixtures rides a turntable. The turntable brings clean parts back to the man who put the work in the machine. High efficiency in operation is obtained since the turntable takes the work through a spray for washing and rinsing. It also takes the work through the air blow-off section, and then back to the loading-unloading station.



Turntable Washing Machine

Chromic Acid Recovery Process

The removal or recovery of chromic acid from rinse water is a development which is of interest to platers. The Barnstead Still & Sterilizer Co., 130 Lanes-

ville Terrace, Boston 31, Mass., has developed a process whereby rinse water can be passed through ion-exchange resins to effect nearly 100 per cent chrome recovery. The advantages to the plating shop are twofold. First, the troublesome chromic acid waste disposal problem is eliminated. Second, the expensive and often scarce chromic acid is recovered for reuse.

In the process, the rinse water is first passed through a cation column to remove aluminum and copper and then through an anion resin bed which removes the chromic acid. The chromic acid is then recovered in the regeneration process. Tests show that the same resins can be used economically for 100 or more cycles. In most instances, savings in chromic acid will more than repay the operating costs of the entire process, which means that the waste disposal problems can be solved at no cost. In addition, as a by product of the process, the user obtains a supply of demineralized water which he can use to good advantage in rinse tanks and solutions.

Electric Radiant Immersion Heater

Glo-Quartz Electric Heater Co., Inc., 37934 Elm St., Willoughby, Ohio, has introduced an electric radiant immersion heater sheathed with smooth fused quartz, said to be resistant to all acids with the exception of hydrofluoric acid, at all concentrations and temperatures. The smooth surface of the quartz sheath, together with far infra-red heat radiation, is claimed to make the units ideally suited for heating phosphatizing solutions since deposits cannot form on the surface of the heating element. The heating elements are replaceable. Available in a large range of standard sizes and voltages, the units are constructed with a ground lead and a standard Underwriter's Laboratories approved, vapor-proof junction box. The junction box, holder, and guard have an approved type Plastisol covering.

Electric Radiant Immersion Heater.

Rotary-Indexing Painting Machine

An automatic, rotary-indexing painting machine developed by the Conforming Matrix Corporation, 356 Factories Bldg., Toledo 2, Ohio, may be completely air-operated or actuated, if required, by electric-motor Geneva drive, according to the manufacturer.

The machine illustrated has 24 workholders and indexes 12 times per each complete revolution of the table, painting the inside of rocket heads two at a time. The part cavity is eight inches deep and the painting is accomplished on the return stroke, with the work being revolved by a variable-speed air drive. The speed of the stroke during painting can be regulated by a convenient dial, and the speed of indexing can be controlled by another dial to paint from 400 to 1200 pieces per hour, two at a time. The ma-

CHEMSTEEL CONSTRUCTION COMPANY, INC.
301 Chemsteel Bldg., Walnut St., Pittsburgh 32, Pa.

Send data on Engineering & Construction facilities for
ACID-ALKALI-PROOF CONSTRUCTION
of processing & storage tanks & flooring in
☐ Steel Plant ☐ Chemical ☐ Textile ☐ Food
NAME.....
COMPANY.....
ADDRESS.....
CITY..... ZONE ..... STATE .....

For a real good polishing job use
Keystone TURKISH Emery
FRESH SUPPLY AVAILABLE
KEYSTONE EMERY MILLS *Write for Sample* **4316 Paul St., Phila., Pa.**

Automatic, Rotary-Indexing Painting Machine.

chine operates in conjunction with a continuous, circulating paint system, and if required can be supplied with hot-spray equipment. It can also be built for 4-, 6-, 8-, 12- or 24-station indexes or for continuous movement.

Ucilon 454

Ucilon 454, an air-drying modified vinyl coating that provides a film three to five times thicker than conventional air-drying vinyls, was introduced at the recent convention of the National Association of Corrosion Engineers by United Chromium, Incorporated, 100 E. 42nd Street, New York 17, N. Y. This coating can be applied by ordinary brushing and spraying techniques. When sprayed, it can produce dry films of 0.003 to 0.005 inch per coat.

According to the manufacturer, two coats of Ucilon 454 are sufficient for most applications, this being one to three coats fewer than required for comparable protection from ordinary vinyl protective coatings. Ucilon 454 resists acids, alkalies, salts, water, and is especially recommended to protect equipment against petroleum and its derivatives.

Having better adhesion than ordinary vinyls, Ucilon 454 can often be used where, because of the poor condition of the surface, ordinary vinyl coatings could not be used.

Rust-Inhibiting Cleaner

The development of Powrite, a rust-inhibiting metal cleaning compound, has been announced by the Whitfield Chemical Company, Dept. 20-A, 14225 Schaefer Highway, Detroit 27, Michigan, manufacturer of industrial metal cleaning chemicals and processes.

Powrite, according to the manufacturer, is being marketed as a multi-purpose cleaning agent, for use in mechanical power washing equipment for removing oil, dirt, chips, and abrasives from all types of metal surfaces. Other uses include: cleaning before phosphatizing; maintenance cleaning of paint; wetting out of dust and paint over-spray; conditioning hard water to prevent scale or rust in mechanical washers, steam equipment, and grinders.

The Powrite compound may be applied in power washers, tanks, or spray booths at concentrations of ½ to 4 ounces per gallon of either hot or cold water. It is stated that rinsing after cleaning is not

Two-stage conveyorized mechanical washer with hot air blow-off for cleaning production parts and sub-assemblies.

necessary, though with some applications it might be advantageous.

Claimed to be dust-free, granular, and water soluble, Powrite is low foaming, preventing lime scale deposition.

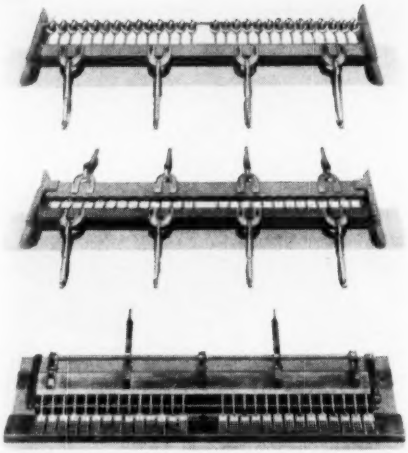
Surface Finishing Fixtures

A group of jigs and fixtures for the mechanical holding of parts being surface finished has been introduced by Clair Manufacturing Company, Olean, N. Y. Designed for use with Clair Surface Finishing Machines, the group includes work holders and layout jigs. Primarily, they are used for holding items such as silverware, but they can be adopted for holding hand tools and other products.

Basically, the holding fixtures consist of: a framework for mounting in a surface finishing machine; a clamping device for holding the items to be surface finished; a provision for supporting heavy-ended items such as spoons.

Two types of construction may be employed. For heavy-duty operations where structural strength is of importance, jigs are made of steel braced aluminum, with a weight of 15 pounds. When the need for minimum weight is a consideration, a steel-braced laminated plastic construction is used. This type weighs 10 pounds.

Clair Holding Jigs employ adjustable quick-acting, center-poised, eccentric clamps with thumb-pressure cam releases. The gripping surfaces are made of inlaid strips of rubber to permit the slight floating action essential in many surface finishing applications. Rubber with a Durometer reading of 45 is suitable for most items, but may be varied as required. On applications for surface finishing silver and silver-plate where sulfur content causes discoloration or where high resistance to petroleum products is important, synthetics may be used instead of rubber.



(Top view) This type of work holder facilitates surface finishing of spoon bowls, fork tynes. (Center view) To avoid costly rehandling between surface finishing operations, batches may be transferred from one rack to another by means of positioning jigs. (Bottom view) Layout jigs, which often are called pre-loaders, assure accurate and rapid loading of racks.

Since the clamps are adjustable to a range of open and closed positions, a standard rack is capable of handling a variety of parts. If dimensions of items exceed normal holding range, modifications can be made at the time of fabrication.

For further information on any product mentioned in this issue—use the READER SERVICE CARDS between the covers.

Cellulose Acetate Butyrate

Eastman Chemical Products, Inc., Kingsport, Tenn., has introduced a new cellulose polymer, half-second viscosity cellulose acetate butyrate, for use as a raw material for industrial finishes.

While cellulose acetate butyrate, or simply "butyrate" is itself not new, having been used in plastic molding compositions, airplane dopes and other specialized coatings for almost fifteen years, its use in the finishing industry has been limited.

The manufacturer points out that half-second butyrate produces excellent metal lacquers. These lacquers, it is claimed,

Eastman prepares to compete with nitrocellulose in metal lacquers with a new half-second (low viscosity) butyrate. Spraying lacquers containing up to 17 per cent solids made from the new safe-to-handle and highly compatible butyrate exhibit greater color stability, resistance to weathering and ability to withstand underwater immersion without whitening or peeling.

exhibit considerably greater resistance to weathering than nitrate lacquers and retain their initially low color much longer. Metal finishes made from half-second butyrate neither whiten during underwater immersion tests, as do most varnishes, nor blister or peel as do nitrate finishes under the same condition.

Butyrate finishes have been shown to be far less flammable than nitrate finishes. Also, unlike nitrate, which must be shipped wet with solvent, the raw half-second butyrate can be handled as a dry powder with complete safety.

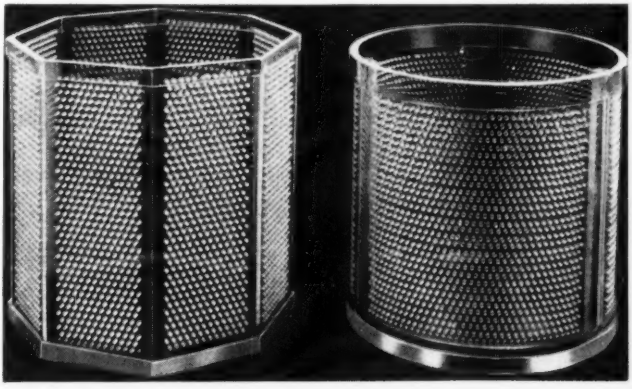
Included among a number of half-second butyrate formulations which have been prepared is the following lacquer for steel, aluminum and other metals:

Half-second butyrate	11.0
Plaskon RS-1 (Dry)	2.0
Acetone	35.0
Butyl Acetate	20.0
Ethanol	10.0
Toluene	10.0
Butyl Cellosolve	10.0
	100.0
Nonvolatile	13.0%
Viscosity (Approx.)	60 cps.

Plating Barrel Cylinders for High Temperature Operation

To meet the industry's demands for plating barrel cylinders that will stand up in high speed solutions operating at high temperatures, the Daniels Plating Barrel & Supply Company, 129 Oliver St., Newark 5, N. J., has developed a new line of cylinders fabricated of Du Pont High-Temperature Lucite, of Fiberglas (Pla-Tank) and of plastisol-covered steel.

These new materials supplement the durable standard Daniels line that includes bakelite cylinders which are ideally suited for less corrosive solutions, such as the conventional nickel, operating at room temperatures, and the rubber-covered bakelite and hard rubber cylinders for higher speed, and higher temperature operation.



Comparison of styles of plating barrel cylinders for high speed, high temperature plating. Cylinders shown are made of Du Pont High-Temperature Lucite.

Another addition to the Daniels line is the new octagonal cylinder that is interchangeable with the round while allowing approximately 10 per cent greater load capacity. The octagonal cylinders add a slight agitation to the plating load thereby reducing plating time and insuring more uniformity.

Black Magic "Pik-Aide"

The Mitchell-Bradford Chemical Co., 2446R Main Street, Stratford, Conn., has announced the development of Black Magic "Pik-Aide".

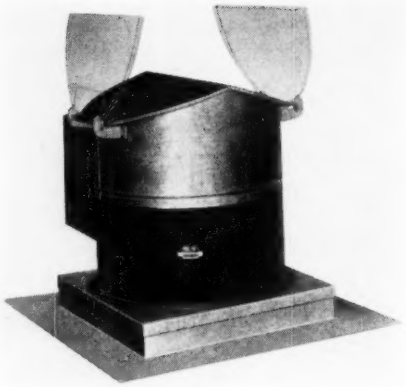
Black Magic "Pik-Aide" is a chemical solution which is added to hydrochloric (muriatic) sulfuric and nitric acid pickling solutions to produce a brighter, uniform, faster and more economical pickling action with a minimum of attack on base metal.

Black Magic "Pik-Aide" is added to acid pickling solutions in the proportions of 2½ quarts "Pik-Aide" to 100 gallons of pickling solutions, according to the manufacturer.

The use of Black Magic "Pik-Aide" in an acid pickling solution is said to eliminate pitting action on base metal resulting in a clean, bright surface after pickling, to reduce acid consumption because of faster and more complete draining of acid pickle solution, to make rinsing more thorough and complete, and to minimize attack on base metal.

Automatic Roof Ventilator

Recently added to the line of ventilating equipment manufactured by M & E Manufacturing Company, 2571 Winthrop Ave., Indianapolis 5, Indiana, is a vertical discharge type automatic roof ventilator.



Automatic roof ventilator.

M & E recommends automatic roof ventilators for applications where positive low cost ventilation is needed to remove hazardous fumes, vapors, smoke, dust laden and obnoxious air.

The vertical, high velocity discharge principle of design of these units is stated to insure highest operating efficiency. Dampers open automatically when the fan begins operation, close tightly when operation is stopped. Exhaust air travels well above roof level preventing the possibility of re-entry into the building. Detachable motor protection cover affords protection against weather hazards, and both fan and motor are readily accessible. Units are constructed of heavy gauge steel, galvanized throughout.

CORROSION-PROOF LININGS CEMENTS BRICK

• TANKS, FLOORS, FUME DUCTS AND PROCESS EQUIPMENT
• COMPLETE LINE OF PROTECTIVE COATINGS . .

Over a Quarter Century of Experience

CEILCOTE CORROSION-PROOF MATERIALS • CONSTRUCTION • SUPERVISION

The CEILCOTE Co. 4832 RIDGE RD. CLEVELAND 9, OHIO

PRODUCT LITERATURE

In requesting copies of catalogs or bulletins mentioned in this issue — use the READER SERVICE CARDS between the covers.

High speed fusing, embossing and laminating of vinyl materials by means of far-infrared electric heat are the sub-

ject of a new ten-page folder, **"THE VINYL REPORT."**

The report tells how cast vinyl can be fused in 10 seconds—at belt speeds up to 100 yards a minute. Proper speeds and temperature settings are suggested for plastisol and organisol materials, in cast or calendered forms, with supported or unsupported films.

Several applications show how Chromalox radiant heaters help save factory space and increase production with minimum investment. Advantages of using far-infrared radiation are described and illustrated by a graph. Technical data and specifications of the radiant heater are also included.

The Vinyl Report was prepared by M. B. Rosevear Company, Bloomfield, New Jersey, New York City area representatives of Edwin L. Wiegand Company, and is based on many successful installations engineered in recent years.

A free copy can be obtained by writing on company letterhead to the **Edwin L. Wiegand Company**, 7552 Thomas Blvd., Pittsburgh 8, Pa.

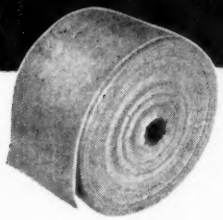
FIDELITY'S "DIP-PAK." A hot-melt plastic coating, "Dip-Pak," manufactured by **FIDELITY CHEMICAL PRODUCTS CORP.**, 470-474 Frelinghuysen Ave., Newark, N. J., is discussed in a clearly printed, four-page leaflet produced by the company. The types of "Dip-Pak" are listed, including the base plastics, colors, physical properties, corrosion resistance, melting and application temperatures, for each.

ADHESIVES, SEALERS AND COATINGS. A 12-page, two-color, illustrated brochure describing the many applications of adhesives, sealers, and coatings as used by the automotive manufacturing industry, is available from **Minnesota Mining & Manufacturing Co.**, Adhesives & Coatings Division, 423 Piquette Avenue, Detroit 2, Michigan. Included in the brochure **(BULLETIN Z-AMM)** are specific recommendations for each type of application.

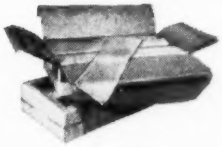
Twenty-three of these automotive applications of adhesives, sealers, and coatings are pictorially illustrated. Coatings, including strippable types also used extensively in the aircraft industry, are

For Dust Free Finishes!

BOND TACK CLOTH



IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY — A SPECK-FREE FINISH EVERY TIME

Now Available in Rolls or Cut Bulk—White or Gold In Three Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up!

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is *Spontaneous Combustion Proof, Lint-Free* and *Wax-Free*. Gives a sparkling speck-free Finish *every time*. Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS. Samples Gladly Sent Upon Request.

BOND CHEMICAL PRODUCTS CO.

"The Tacky Wiper Specialists"

2639 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

ALSO INDIVIDUALLY PACKED IN GLASSINE ENVELOPES —144 to the Carton

A WARRANTY OF SATISFACTION IN EVERY CARTON

covered. These as well as underbody and chrome coatings are also well illustrated.

ANODES AND CHEMICALS BULLETIN. A 16-page, two color bulletin, offered by **Hanson-Van Winkle-Munning Co.**, Matawan, N. J., describes and illustrates a complete line of H-VW-M anodes, anode accessories, plating processes and plating chemicals.

In **BULLETIN AC-107, "ANODES AND PLATING CHEMICALS,"** are listed specifications and recommended applications for nine styles of anode bags, three types of diaphragms and 12 types of anodes. The bulletin describes 16 different H-VW-M plating processes. It describes the types of deposit and lists special equipment that the different baths will plate.

The bulletin also describes 30 salts commonly used in electroplating baths; 11 brighteners used in H-VW-M solutions; six kinds of purification materials; and the oxidizing liquid used in copper, bronze and silver plating.

In addition, the bulletin tells how to test local thicknesses of electrodeposited cadmium, zinc, tin, copper and H-VW-M albaloy. Four tables list the various times, temperatures and thicknesses of deposits made by the metals during test runs.

MECHANICAL POLISHING MACHINE. A six-page illustrated booklet describing its line of vertical and horizontal mechanical buffing and polishing machines is available from **Central Machine Works**, 72 Commercial St., Worcester, Mass.

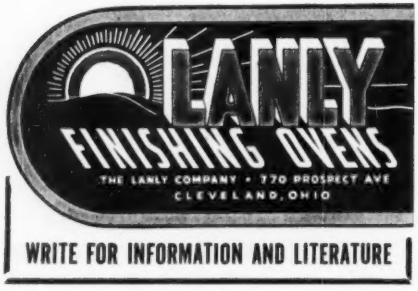
Described and illustrated in the catalog are the Series M Vertical Double Roll Polishing Machines, the Series H-M Horizontal Polishing Machines and the Series MM-2 Vertical Polishing Machines. Construction and operation of the machines is described in detail and suggestions as to a few of the many possible applications for these products are included in the bulletin. Specifications of the machine, together with a brief outline of the operating principles, are listed. Four special applications which serve to illustrate the fixture design service offered by the company are also included in the bulletin.

PETERS-DALTON TECHNICAL BULLETIN NO. 501. PLANNED SYSTEMS is the title of a 12-page illustrated brochure describing the equipment manufactured by Peters-Dalton, and the integration of the various components into complete systems. Available from **PETERS-DALTON, INC.**, 17908 Ryan Rd., Detroit 12, Mich., the booklet pictures metal cleaning and rust proofing machines, spray booths, drying and baking ovens, and a complete system for paint finishing.

VINSOL BOOKLET. A technical booklet giving up-to-date information about the use of Vinsol, a low-cost dark-colored resin, in a variety of applications is available from **Hercules Powder Company,** Wilmington, Delaware.

Applications for Vinsol discussed include its use in adhesives, asphalt emulsions, hydraulic cement, electrical insulation, ink, shoes, floor coverings, paper, plastics, and protective coatings.

Information about the forms in which Vinsol is available and properties of the resins is included in the booklet.



FINISHING BULLETIN. Pelron Corporation, 7662 West 47th St., Lyons, Illinois, has announced the publication of a new brochure dealing with Pelron's services and products for the finishing industry. The bulletin describes in detail the service which Pelron offers manufacturers. This service includes special problem studies and recommendations regarding metal cleaning, phosphatizing, paint

stripping, and paint booth operations. The brochure explains how Pelron studies lead to the development of compounds to handle these problem jobs.

Also included in the bulletin are detailed descriptions of Pelron's line of standard products which have been specially developed to handle various specific metal finishing jobs and are available to manufacturers as such.

WATER WASH SPRAY BOOTH BULLETIN. An illustrated bulletin designated as **BULLETIN DUC** describing the Binks Dynaprecipitor Spray Booth is available from **Binks Manufacturing Co.**, 3118-40 W. Carroll St., Chicago, Ill.

The advantages to the user which result from design features of the dynaprecipitor spray booth are fully described and illustrated in detail in the bulletin. Also illustrated are suggested installation plans showing how the spray booth may be located with respect to air makeup units. Specifications listing dimensions and booth capacity and other necessary data for various standard Dynaprecipitor water wash spray booths are included.

CORROSION RESISTANT EQUIPMENT. BULLETIN F-6, available from **Haveg Corporation,** Newark, Delaware, provides complete information regarding the corrosion resistant equipment manufactured by the company.

Products are indexed by groups in the 68-page bulletin for the convenience of the reader. Included in the product classifications are valves and pumps, standard Haveg pipe and fittings, fume ducts, rectangular tanks, and agitators.

Applications of the various products to industrial processes are outlined, and properties of Haveg materials are described. For each group of products, typical uses in industry are shown by means of illustrations.

Haveg equipment, described in the bulletin, is molded from a mixture of a special acid-digested asbestos and synthetic resin. The composition has strength, toughness and durability, and corrosion resistance. Products fabricated specifically for the finishing industry include cleaning and pickling tanks, electroplating tanks, drain and sewer lines, fume ducts, and special products.

"HEAT LINES BY JENSEN." A bimonthly publication of technical data and tips on process heating is now being published by **Jensen Specialties, Inc.**, 9331 Freeland Ave., Detroit 28, Michigan.

Typical installations at major U. S. manufacturing plants are featured in each issue. Special heating problems of these manufacturers, and how they were solved, are described and illustrated. Other factual reports and features round out the four-page publication.

ELECTRIC GRINDERS AND BUFFERS. The Hisey-Wolf Machine Co., Cincinnati, Ohio, is distributing its **CATALOG 72,** which describes the many electric drills, electric grinders, and electric buffers and polishing lathes manufactured by the company.

Products are listed by groups, each group is illustrated by typical examples, and dimensions and specifications are included. The groups of products described are: attachments and accessories, buffing and polishing machines, combination grinders and buffers, dust collectors, dust hoods, eye shields, and grinding machines.

The Finishing Touch — **By J. A. Patterson**

"Knock again, Paw . . . They may be out in back somewhere's."

Opportunity Section

SOUTH FLORIDA TEST SERVICE

Testing—Inspection—Research—Engineers

Consultants and specialists in corrosion, weathering and sunlight testing.

4201 N.W. 7th St., Miami 34, Florida

INDUSTRIAL SALES

Manufacturer of Circo Vapor Degreasing Equipment and Degreasing Solvents desires experienced sales representation in established territories.

Topper Equipment Company

Clark Township, Rahway, N. J.

Manufacturer's Representatives wanted by leading manufacturer of Rust Preventative Coatings for maintenance work: Sell distributors and assist their men in selling industrial accounts. Exclusive territories still available. Give full details, territory covered, etc. in first letter. Will arrange personal interview.

RUST-SELE COMPANY, Cleveland 5, Ohio

Our laboratory expansion program creates two openings—one for a Stain & Filler Formulator and Color Matcher; and the other for a Lacquer Formulator. Approximately five years experience desirable. Liberal insurance, hospitalization and pension plans. Will work in new laboratory, now under construction. Write Personnel Manager, American-Marietta Company, 901 North Greenwood Avenue, Kankakee, Illinois. If you prefer, 'phone collect Kankakee 3-5561.

FOR SALE

2 Divine Four unit type V automatic straight line polishing machines. One with 7½ HP motors and one with 10 HP motors. Both with conveyor, drive, belt and all motors, starters and applicators. 220 V 3 phase, 60 cycle. Used but in good condition. Reasonable. Box No. 71, c/o PRODUCTS FINISHING, 431 Main Street, Cincinnati 2, Ohio.

FOR SALE

Cincinnati Washer—Single Stage, 24" wide Steel Belt Type. Opening 24" x 13" Variable Speed drive on Belt.

1. Duct opening for forced air dryoff could be adapted with "heat on" dryoff.
2. 24' long, 6' wide, 6' high less duct.
3. Steam heated.
4. Dual control on upper and lower pressure can be used independently.
5. "V" Jet nozzles.
6. Complete with pumps and motors.
7. Tank size 20' x 4". Capacity 1200 gal.
8. 3 years old. Original cost $4500.00—will sell for $2000.00.

Reply to:

ART DIONNE
c/o Moe Light, Inc.
700 OAK ST., FORT ATKINSON, WIS.

HELP WANTED

Salesmen - Industrial Finishes

Minnesota — Wisconsin — Iowa

Must be experienced, young and aggressive.

Frost Paint & Oil Corp., Minneapolis, Minn.

This Opportunity Section is available for classified advertisements. For advertising rates and other information address:

PRODUCTS FINISHING

431 MAIN STREET, CINCINNATI 2, OHIO

INDEX TO ADVERTISEMENTS

Agate Lacquer Mfg. Co., Inc. 107
Allied Research Products, Inc. 67
Almco Div., Queen Stove Works, Inc. 84
Alsop Engr. Corp. 89
American Chemical Paint Co. 53
Automotive Rubber Co. 63

Baker & Co., Inc. 10
Bart-Messing Corp. 101
Behr-Manning, Div. of Norton Co. 7
Better Finishes & Coatings, Inc. 57
Binks Mfg. Co. 108, 109
Blakeslee & Co., G. S. 6
Bond Chemical Products Co. 123
Buckingham Products Co. 51

Ceilcote Co. 122
Central Machine Works 68
Chemsteel Construction Co., Inc. 118
Cincinnati Cleaning & Finishing Mchry. Co. ..... Second Cover
Clair Mfg. Co., Inc. 86
Clinton Co. 13
Cowles Chemical Co. 20

Daniels Plating Barrel & Supply Co. 96
Despatch Oven Co. 43
Detrex Corp. ..... Fourth Cover
Detro Mfg. & Sales Co., Inc. 74
DeVilbiss Co. 18, 19
Dixon & Rippel, Inc. 90
Doepke Mfg. Co., Chas. Wm. 103
DuBois Co. 11

Egyptian Lacquer Mfg. Co. 4

Fidelity Chemical Products Co. 54

General Electric Co. 31

Hanson-Van Winkle-Munning Co. 3, 85
Harrison & Co., Inc. 59
Harshaw Chemical Co. 75
Hisey-Wolf Machine Co. 47

Industrial Chemical Products Co. 16
Industrial Filter & Pump Mfg. Co. 52
Industrial Systems Co. 71

Keystone Emery Mills 118
Kirk & Blum Mfg. Co. 14
Koch Sons, Inc., George 87

Lanly Co. 124

M & E Mfg. Co. 98
MacDermid, Inc. ..... Third Cover
Metalwash Mchry. Corp. 83
Miracle Paint Rejuvenator Co., Inc. 103
Morse Mfg. Co., Inc. 114
Mosher Co. 105

New York Blower Co. 12
Newcomb-Detroit Co., Inc. 80
Norton Co. 2

Oakite Products, Inc. 1
Osborn Mfg. Co. 15

Packer Machine Co. 81
Panoco 116
Parker Rust Proof Co. 69
Pelron Corp. 91
Peters-Dalton, Inc. 29
Phillips Mfg. Co. 49
Pittsburgh Plate Glass Co., Paint Div. 72, 73
Potter Paint Co., Inc. 56

Randolph Products Co. 92
Rockford Varnish Co. 61

Schori Process Div., Ferro-Co Corp. 95
Sherwin-Williams Co. 8, 9
Solventol Chemical Products, Inc. 62
Solvents Recovery Service, Inc. 116
Stanley Chemical Co. 79
Stevens, Inc., Frederic B. 17
Striplastic Co. 82
Stutz Mfg. Co., Geo. A. 99
Sulphur Products Co. 114
Syntron, Inc. 66

Topper Equipment Co. 94

Udylite Corp. 44, 45
United Chromium, Inc. 64, 65
U. S. Spring & Bumper Co. 97

Wagner Bros., Inc. 33
Wallace & Tiernan Co., Inc. 55

LET US SHOW YOU *These* NEW COMPOUNDS NOW!

PHOSPHOTEX—ZINC PHOSPHATE SOLUTION

A complex composition of iron and zinc phosphates — simple to operate — produces dense fine grain deposits at a rapid rate — heavy coating weights are easily obtained — gives excellent paint adhesion — steel equipment is satisfactory.

WRITE FOR DATA SHEET #27.

DURAFOS—IRON PHOSPHATE COATING

Durafos performs three functions: cleaning of light soil —Rust proofing in either dip or spray applications— and bonding of subsequent coatings. Steel equipment satisfactory. Durafos is a dry powder used at 1 to 2 oz. 1 gal., at 160° f. WRITE FOR DATA SHEET #11.

METEX #157 ACID CLEANER

New phosphoric acid type metal conditioner that can be applied by spray, wipe-on or immersion. Completely removes light oils, rust and other light surface contaminations. Prepares surfaces of steel, aluminum and zinc for painting or processing. Retards rust formation on clean surfaces. Promotes excellent paint adhesion.

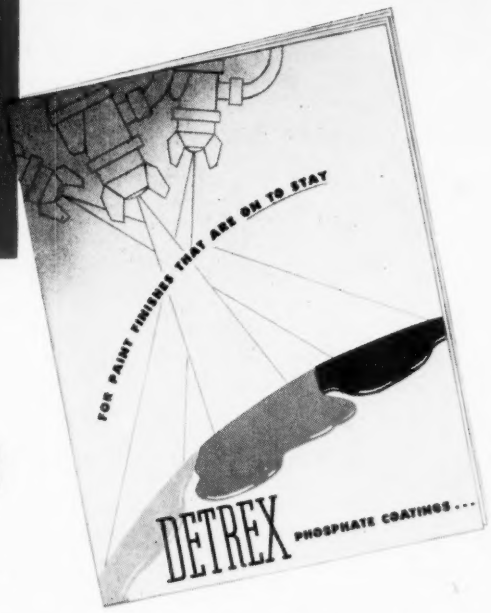
WRITE FOR DATA SHEET #31.

Write FOR Free DATA SHEETS!

Thirty Years Service to The Metal Finishing Industry

MAC DERMID
★ *Incorporated* ★
WATERBURY 20, CONNECTICUT

DETREX
PHOSPHATE COATINGS



IF YOU PAINT YOUR PRODUCT...

you need this free booklet!

. . . because it tells how Detrex can help you obtain greater sales appeal for your painted metal products through better paint finish and longer paint life.

This new booklet describes PaintBond, a zinc phosphate coating for metal surfaces prior to painting. This fine-grained crystalline coating is applied by spray or immersion means, to provide millions of microscopic crevices into which the paint flows. Your paint is *locked on to stay* for a beautiful, durable finish.

Insoluble in water, PaintBond seals off the metal from moisture and other causes of corrosion. Even if the paint finish is marred or scratched, rust is confined to the exposed area. The surrounding paint remains locked securely to the metal.

PaintBond is economical to use and meets government specifications for phosphate coated surfaces.

Applications and equipment recommendations are fully described in this new booklet which also tells about the laboratory, manufacturing, engineering, and field service facilities of Detrex—a company long experienced in serving industry with both the equipment and the chemicals for all cleaning and phosphate coating requirements.

For your free copy, write today to

Detrex Corporation, Box 501, Detroit 32, Michigan.

P-2

DETREX CORPORATION

DEGREASERS • DEGREASING SOLVENTS • WASHERS
ALKALI & EMULSION CLEANERS • DRYCLEANING EQUIPMENT
PHOSPHATE COATING PROCESSES